August 2007

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DEVELOPMENT TRENDS & TECHNOLOGIES FOR FORMULATORS & MARKETERS

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Track B: Meats & Marinades
Track C: Baked Goods
Track D: Starches, Gums & Fiber
Track E: Sports & Energy Drinks
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Track G: New Emerging Ingredients
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Track I: Healthful Formulations
Track J: Application Labs

Tuesday, September 18, 2007
Track A: Prepared Foods
Track B: New Emerging Ingredients
Track C: Nutritional Beverages & Foods
Track D: Flavors & Flavor Enhancement
Track E: Dairy & Frozen Novelty
Track F: Confectionery, Ice Cream & Desserts
Track G: Healthful Formulations
Track H: Product Development Advances
Track I: Breakfast Cereals, Snacks & Bars
Track J: Application Labs

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Now We're Cooking

William A. Roberts, Jr.
Business Editor
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Has anyone noticed just how frequently cooking has been showing up in popular culture of late? It certainly is not a new phenomenon; recipes and such have been a hallmark of television almost since its inception, and I fondly recall rainy days of my youth spent watching Justin Wilson blend his skills in the kitchen with his homespun humor, both distinctly Cajun. While his recipes and creations certainly appeared delectable, I have to admit it was the comedic entertainment that kept me coming back.

For that matter, in much of the current entertainment focusing on cooking, the recipes have little to do with the show. *Top Chef* and *Hell's Kitchen* are two prime examples from the television front. Both are reality shows, but neither delves deeply into the creation of dishes. *Hell's Kitchen* does not even promote recipes from the episodes on its website. In its defense, *Top Chef* offers an ample assortment of recipes and tips on its site, but it is still interesting that two shows with cooking at their heart have little actual advice on the subject.

In the movie *Waitress*, the lead character creates pies whose ingredients offer a glimpse into her emotions, and while I have yet to partake of "Earl Murders Me Because I'm Having an Affair Pie" or "Pregnant Miserable Self-pitying Loser Pie," the viewer is left to wonder if those creations convey those feelings. Certainly, the unusual mix of ingredients suggests they might.

The recent Pixar-Disney release *Ratatouille*, while weaving its tale of a mouse with gourmet ambitions, actually attempted something seemingly impossible: to give the viewer a visual sense of taste. In the process, the film undoubtedly introduced moviegoers to an entire lexicon of flavors and ingredients. To be honest, that is about as much as you can expect in terms of cooking advice on the big screen, but it had another important element: the sentiment "Anyone can cook."

Entrants in this year's Spirit of Innovation Awards are helping to make that a little less intimidating, and a number of high-quality products were among the group; the winners will be announced soon. In fact, the 2007 entrants received the highest marks in the Awards' history and included such premium-positioned products as a heat-and-serve soufflé, a line of pasta sauces featuring upscale flavors with varietal wines, and marinated, stuffed pork entrées. All of which are helping to make sure "anyone can cook…well." PF

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Prepared Foods' third annual R&D Applications Seminar, with nearly 90 presentations, will be held September 16-19, 2007, at the Englewood Resort & Spa in Itasca, Ill.

Following on the heels of the highly successful 2006 conference, presentations are designed with the information needs of bench level formulators in mind. Applications and subjects covered include healthful ingredients, baked goods, sports and energy drinks, new emerging ingredients, organics, allergen-free labeling, prepared meals and processed meats.

An Applications Lab Track has been added to the program at the 2007 R&D Applications Seminar. This exciting Lab Track will feature the use of product samples to more effectively demonstrate an ingredient's functionality or its use in a finished consumer product or model system.

For example, one track may showcase a series of hydrocolloid gum samples (guar, xanthan, etc.) to more vividly demonstrate the ingredients' functionality under varying conditions (temperature, viscosity, acidity, etc.).

Another track might feature a series of consumer product samples (baked goods) with varying levels of an ingredient (fiber) to help demonstrate the effect on mouthfeel, taste, color, moisture and appearance.

The 2007 Applications Seminar will feature separate Applications Lab sessions on Monday and Tuesday and four Application Lab sessions only on Wednesday morning. The high-tech, acoustically vibrant, executive-style Trillium Amphitheater will house the 90-minute Applications Lab sessions.

For more information, see www.PreparedFoods.com/rd or contact Marge Whalen at 630-694-4347 or whalenm@bnpmedia.com.

Hitting the Shelves

Fruit with a Kick

Bloom Energy is a new, fruit juice-based energy drink from Del Monte—the company's first venture into the energy drink market. Each lightly carbonated beverage has 100 calories per 10.5oz can and delivers a full serving of fruit as well as vitamins B, C and D, calcium and a boost of antioxidants. They are also naturally caffeinated, using white tea extract and guarana. Every can has about as much caffeine as a cup of coffee (74mg). The drinks are available in three flavors: Mango Passionfruit, Cran Raspberry and Wild Berry. According to Del Monte, the beverages are targeted towards women looking for a healthier energy drink, and it even incorporated the "spread good energy" tagline into the product's marketing campaign—suggesting that these beverages provide a more natural source of energy than competing energy beverages.

It's Good to Concentrate

Traditionally, most liquid beverage concentrates have been positioned toward children, while products for adults tended to be available as dry powders and mixes. Some exceptions are family-positioned powdered drink mixes. Ferolito Vultaggio & Sons' AriZona brand departs from this rule with the launch of a liquid iced tea concentrate clearly targeted at a more adult market. This format offers added convenience, as smaller containers are easier to store and take up less space. These concentrates also allow dilution to taste—some consumers might want their tea stronger, while others would add more water. The cans come in a pack of four, each making two quarts. Moreover, the products appeal to consumers looking for more natural beverages to quench their thirst, as they are 100% natural, free from preservatives, artificial flavors and coloring. Both ginseng and honey (added flavors) have a strong healthy reputation, and green tea is also widely known to be rich in antioxidants.

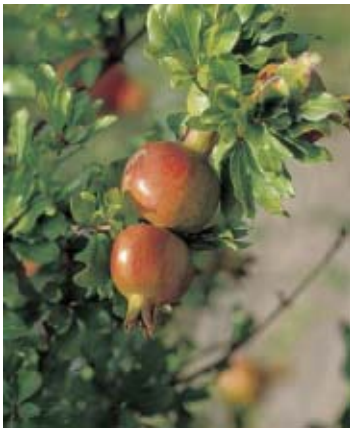
Wrap it Up

Pre-made sushi wrappers have been on the market globally for quite some time, although the concept is a bit new to the U.S. These wraps, made from soy, are sold by Yamamotoyama. What is unique about them is that they come in a variety of flavors (and colors) and that they are positioned as being for parties or for communal enjoyment (thus the name, SushiParty). The package provides one sheet each of five different flavors: Turmeric Yellow, Sesame, Paprika Orange, Pink, Original and Spinach Green. The variety-pack concept is something different from standard sushi wrappers sold in 10-sheet or 20-sheet quantities of just one flavor. With bright colors and graphics and strong messaging, the packaging clearly communicates the product's attributes and health qualities.

More than a Mint

It is not enough these days for a lowly mint to just freshen breath. More companies are introducing products with a wide variety of additional benefits. Some care for teeth, others offer no calories and still others send a "hint" to recipients of the package of mints that they need to address the issue of their breath.

As a result, it seems like everyone is getting into the mint game. Now, Hershey Foods has expanded its Ice Breakers' line to include a range of mints, all with various benefits and all with fun graphics. The line includes Restore (with antioxidant vitamins in a pomegranate flavor), Center (with antioxidants and ginseng), Lift Your Spirits (antioxidants, vitamin C and green tea) and Energy (with caffeine).



Açaí of Relief

Unique and unusual flavors come and go, often based on the whims of consumers. Those flavors that have staying power are those that tend to offer some sort of additional benefit or ones that can be applied to a number of categories. Pomegranate has been one such flavor that has moved into a number of categories and also offers a strong health positioning (substantial antioxidant content). Açaí, a fruit native to Brazil, offers similar benefits—thus the steeply increasing numbers seen in this table. Expect to see more products containing açaí move into additional categories in the next year, as the flavor becomes more established.

In other countries, interesting products of note have focused on unique package concepts and very unusual formulations. In terms of formulations, in Canada, retailer Sobeys has introduced a box of eight frozen hamburgers that are formulated with Brazilian açaí berry. They are low-fat, but it is unclear exactly what the benefit of the açaí berry is in the burger. Another unusual formulation (especially to U.S. palates) is a drink from Nutrition & Sante under its Gerble line in the Netherlands. This drink is a soy-based drink that is made with cereal. Given the formulation, it is positioned as a breakfast drink and is aimed specifically at women over 50 years old.

Gaining Açaí

Acai as an Ingredient in U.S. Food and Beverage Introductions: 2005-June 2007

	January-June			
Category	2007	2006	2005	Total
Beverages	21	58	13	103
Breakfast cereals	0	3	0	3
Dairy	10	2	0	12
Desserts & Ice cream	13	3	2	18
Fruits & Vegetables	0	0	1	1
Snacks	3	1	1	5
Spreads	0	1	0	1
Total	**47**	**68**	**17**	**159**

Source: Mintel Global New Products Database

GlobalTrends

A product designed for older consumers is sold in the Netherlands. Perfect Age tea is made with red algae extracts to cleanse the body. The company claims the product helps slow the aging process.

From a packaging standpoint, several products stand out. In France, La Fermiere offers a yogurt that has a fruit topping. That is nothing new, but the package is designed so that consumers unmold it from the plastic tub onto a plate. When they do that, the fruit layer flows over the rest of the yogurt, and the result is a unique dessert positioning for this line.

A truly unique and new positioning for a mainstay product has appeared in the U.K. PepsiCo has added unique information to its Walkers Cheese & Onion Crisps. Labeling provides information on the product's carbon footprint (meaning how much energy was expended to produce and ship the product). This is a first of its kind, and expect to see more.

Older consumers are always on the lookout for convenient ways to improve their health and prolong their lives, especially with products enjoyable to consume. In line with this, in Japan, Mercian released Black Wine, a line of functional wines targeted at seniors. The wines are promoted as containing grape-derived resveratrol and GABA, two ingredients increasingly being added to foods and beverages for their functional health benefits. GABA is becoming more widespread due to its mood-improving qualities (it is claimed to induce relaxation and "balance" the brain), as well as its ability to stimulate higher levels of human growth hormone, which has anti-aging, fat-preventing and muscle-building benefits. Resveratrol is also claimed to have anti-aging and life-prolonging effects in addition to anti-cancer, anti-viral, anti-inflammatory and neuro-protective benefits. For those who are not too keen on wine because of its characteristic bitterness or acidity, these wines are mild and have concentrated grape sweetness and flavor. The Black Wine contains three times more resveratrol than the company's regular red wines, and the Golden Wine contains eight times more GABA than the company's regular white wines.

Launching a New Product?
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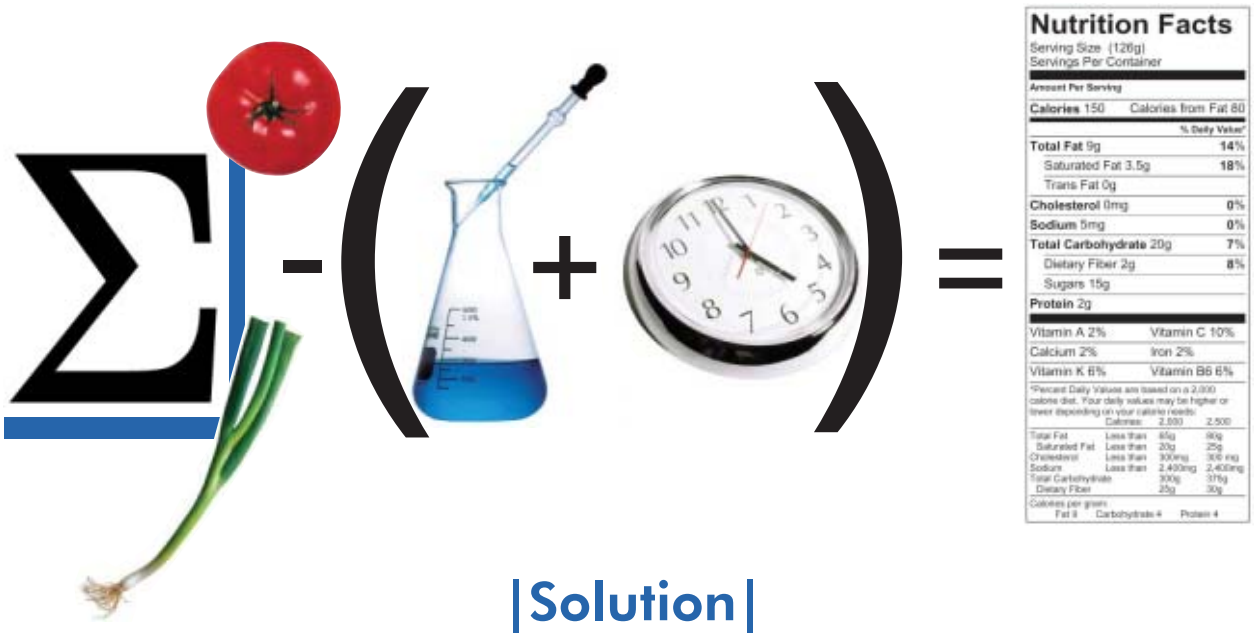
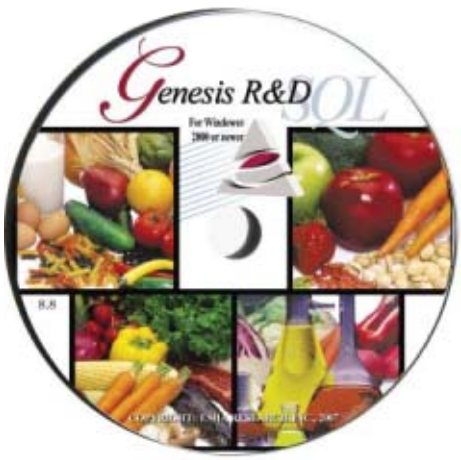


|Solution|



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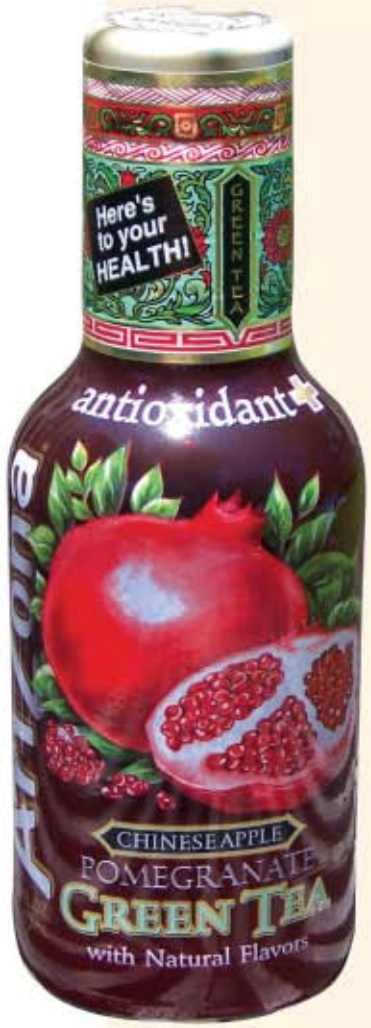
Complex Function

Annual sales of functional foods and beverages surpassed the $15 billion mark between 2001 and 2006, with strong showings from a variety of beverages and continued strength in several food segments. Despite this growth, there remains quite a bit of potential, particularly if manufacturers can capitalize on consumer education programs to reach a new customer base.

William A. Roberts, Jr., Business Editor



As Mintel's report notes, hip brands, lively packaging and innovative varieties and flavor combinations have helped to boost sales of ready-to-drink functional teas.

The market for functional foods and beverages is estimated at $15.4 billion, according to projections by Mintel Group in its report "Functional Foods and Beverages—U.S." The report says there was a 19% increase in food/drug/mass merchandiser (FDM) sales between 2001 and 2006; however, this double-digit growth masks a somewhat stagnant market. Mintel defines functional foods as products that make a distinct, written health claim, possibly enhanced in some way, with added ingredients or through the act of processing. Between 2001 and 2006, FDM sales increased only 4% in constant dollars, with the bulk of that growth occurring in 2002. In fact, Mintel notes, the market has been essentially flat since 2003, due "primarily to the maturity of the largest food and drink segments, bakery/cereal and juice/juice drinks, respectively." The future may well hold more of the same, if Mintel's report is any indication: "Significant expansion of the segment in 2006-2011 will be a challenge."

Part of the problem would seem to be consumer perceptions. Consumers remain skeptical about the benefits of the products; however, the majority of functional consumers are not eating or drinking enough of each product to attain the promised benefits. This leads to a potentially wise marketing suggestion by Mintel: companies should promote and encourage greater frequency of consumption, while building consumer confidence in the efficacy of functional products. How best to deliver these messages will prove a difficult decision.

According to consumer research commissioned exclusively for this report, 60% of respondents who purchased functional foods in the prior three months had eaten a functional food 10 or fewer times in the past month. Mintel suggests marketing campaigns focus upon frequency of consumption, as for most products, 10 times per month is not enough to achieve the purported benefit. (An important distinction has to be made here: these 10 purchases are not all of the same product. These consumers are buying different functional items, further lowering the number of times each food has been eaten per month.)

Why do consumers purchase functional products? Mintel's research found "dietary supplementation" and "weight management" ahead of "to address specific health issues" (cited by 30% of buyers), a troubling statistic considering that is ostensibly what functional foods have been engineered to do. "These survey data," observes the report,

Future Function

Forecast of U.S. Sales of Functional Foods and Beverages, 2006-2011, in Millions at Current Prices (with Percent Change in Parentheses)

Year	Beverages	Foods	Total Functional Category
2011	$10,655 (+3.8%)	$7,214 (+1.7%)	$17,869 (+3.0%)
2010	$10,261 (+3.8%)	$7,095 (+1.7%)	$17,356 (+2.9%)
2009	$9,882 (+4.1%)	$6,977 (+1.7%)	$16,859 (+3.1%)
2008	$9,494 (+4.2%)	$6,858 (+1.8%)	$16,352 (+3.2%)
2007	$9,113 (+4.1%)	$6,739 (+1.8%)	$15,852 (+3.1%)
2006	$8,749 (—)	$6,620 (—)	$15,369 (—)

Source: Mintel; excludes sales at Wal-Mart and warehouse clubs

"make clear that functional products will not 'sell themselves,' but rather must be actively and clearly promoted."

Reasoning Why

Some 48% of functional food buyers do so to "make up for poor eating habits" and are unlikely to be consuming the products enough to receive the full benefit, the report contends. The two leading reasons for not consuming are overpricing (cited by 43%) and a lack of belief in the claims being made (35%).

Further complicating matters are the consumers who claim not to "need" functional products. Some 32% say they do not "need" them because they take dietary supplements; 30% because they maintain a healthy diet and lifestyle; 17% because they believe they get what they need from conventional foods and beverages; and 11% because they take prescription drugs that address their health issues. As a consequence, Mintel believes the future of the market rests with getting existing consumers to eat more, appealing to very young adults or working with the medical community to build the credibility of products.

Manufacturers have had some success in publicizing the results of clinical trials, and Mintel's report notes that sampling has helped to prove that foods with medicinal qualities do not have to taste like medicine. Furthermore, it encourages manufacturers to consider partnering with health-oriented organizations, allowing them to associate their food and beverage products with specific benefits.

When it comes to functional foods and beverages, consumers are both skeptical and confused, impeding the development of the market since its inception. As Mintel's report indicates, "The fact that the FDA permits so-called qualified health claims for various foods is indicative of the friendliest regulatory environment the U.S. market has ever seen, but these claims can confuse shoppers as well as enlighten them." Consumer education efforts offer details about studies supporting the effectiveness of functional ingredients and—ideally to Mintel's thinking—manufacturers should persuade consumers to use the products regularly. Dannon has done this effectively by recommending DanActive's daily use for two weeks to achieve regularity.

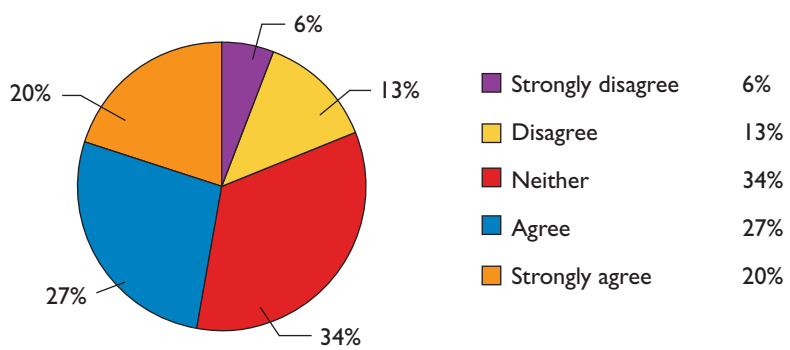
Dannon DanActive benefits from the unique culture *L. casei immunitas* to "strengthen your body's defenses," but despite the product's success, sales of smoothies and yogurt drinks improved a slight 1.2% between 2004 and 2006 to reach $285 million. Refrigerated smoothies and yogurt drinks first hit the market in 2002 with strong debuts from Yoplait, Groupe Danone and G. Hausen.

Unfortunately, Mintel predicts sales in the segment will decline in the near future, due largely to significant declines in Nouriche sales, based on data from Information Resources Inc.

What You See...

Consumer Ability to Determine Which Foods are Functional

"It is difficult to tell which foods are functional and which foods are not functional"



Source: Harris Poll Online/Datascension/Mintel; n=685 adults (18+) who have bought a functional food or drink in the three months prior to September 2006

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Buying Time

Why Consumers are not Buying Functional Products

I think they are overpriced	43%
I don't believe the claims they make	35%
I take vitamin and mineral supplement(s) instead	32%
I already maintain a healthy diet and lifestyle	30%
I don't know enough about them	29%
They cost more than regular versions	28%
Regular food or drinks already give me what I need	17%
My prescription medication already gives me what I need	11%
They could be bad for me	8%
Other	7%

Source: Harris Poll Online/Datascension/Mintel; n=1,315 adults (18+) who have not bought a functional food or drink in the three months prior to September 2006

Other segments of functional beverages fared better during the period under review, growing total sales for functional beverages by about $1.1 billion. In fact, four of the six segments grew sales substantially, with sales of soy-based drinks up nearly 14%, tea increasing 48.7%, enhanced water/sports drinks rising 81.3% and a breathtaking 171.1% jump in energy drinks. In terms of segment share, all of these trail juice/juice drinks, though that segment has seen a decline.

On Juice

In the juice/juice drink segment, annual sales declines have exceeded 4% since 2003, Mintel finds. While juices are almost inherently perceived as healthy, functional varieties have met many of the same challenges plaguing the overall juice market: that these "can be sugary, high-calorie, high-carbohydrate delivery systems for nutrients," to quote Mintel's report. Further complicating matters has been the segment's relative lack of innovation. Mintel says no product tracked for its report was less than three years old.

Functional teas, meanwhile, have seen strong growth in recent years. Tea, widely perceived as a healthy beverage and inherently rich in antioxidants and polyphenols, is a "natural vehicle for added herbs and other botanicals and is easily flavored." As Mintel explains, ready-to-drink options in this segment have been boosted by hip brands, lively packaging and innovative varieties and flavor combinations, notably under the AriZona, SoBe and Fuze brands.

Sales of soy-based drinks are not in decline, but the growth rate has plunged since 2002, notes Mintel. Soy-based beverages tend to feature the FDA-approved soy protein health claim prominently, in addition to vitamin, mineral or supplement fortification. Hain Celestial's WestSoy Plus soymilk, for example, adds calcium, vitamins A and D, and riboflavin for a nutritional profile resembling that of dairy milk.

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TAKASAGO

Functional dairy and margarine products enjoyed a 13.7% sales increase between 2004 and 2006, well ahead of other functional foods, in which growth was fairly stagnant.

The functional dairy and margarine segment saw FDM sales increase 57% during the period under review, 37% in real terms, to reach an estimated $820 million in 2006. For its coverage, Mintel groups fortified eggs into this segment, and they comprised 28% of dairy's dollar sales in 2005, compared to 21% in 2001 and serving as "another bright spot," says the report.

Cholesterol-lowering margarines provided a boost to the segment with the 1999 launch of McNeil's Benecol and Unilever's Take Control, but that momentum has "fizzled," as consumers have either abandoned attempts at lowering cholesterol or opted for alternative methods. The increase in sales of functional dairy and margarine was attributed to growth in yogurt and omega-3-enhanced fresh eggs.

The 13.7% increase in FDM sales for dairy and margarine between 2004 and 2006 was well ahead of the growth of other functional foods. In fact, sales in other segments were stagnant, as the category registered a slim 2.9% increase in sales during that time. "Other processed foods" saw virtually no change in sales, while bakery and cereal climbed a slight 2.2%. Less positive news was seen in bars and snacks, with a 0.7% decline, dropping from $984 million in 2004 to $977 million in 2006.

The latter segment was strong in 2002 and 2003, but sales sagged thereafter. Between 2001 and 2006, sales grew 49%, although most of the growth was during the first two years. In its 2004 report, Mintel warned that the segment was mature and that manufacturers needed to address consumer confusion over nutrition and efficacy. Those fears appear to have been realized, even while the segment has seen some innovative focus, particularly one introduction from Mars Inc. "CocoaVia is one of the most exciting things to happen to this category in a long time," the report explains, "and the science supporting the effectiveness of plant sterols is sound (plus, cocoa contains naturally occurring polyphenols), but Mars has already run afoul of the FDA for its claims, which may discourage genuine innovation among other marketers."

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Executive Vice President
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Soy-based beverages are still seeing sales growth, just not at the pace of pre-2002 levels. Still, the products offer a relatively parent-friendly means of incorporating needed nutrients into children's diets, without imparting unneeded sugar.

In the bakery and cereal segment of functional foods, a good dose of innovation could only help, as sales here decreased at least somewhat in constant terms every year reviewed. Over the five-year span, sales have dropped roughly 10% in constant dollars, with declines in General Mills' Cheerios brand noted particularly in the report. "Strong showings by Kellogg's Special K, Kashi and Smart Start brands," it details, "have not sufficed to buoy the category." Nonetheless, functional cereals are outperforming the overall cereal category, which Mintel estimates declined 18% in constant dollars during the period under review.

The challenge for all forms of cereal is the same: the time-pressed consumer skipping breakfast. No matter that various health entities refer to it as the "most important meal of the day," surveys continue to show consumers abandoning the morning meal. H.J. Heinz' Better Together Breakfast survey in June 2006 found 60% of respondents believed it was too difficult to find time to make breakfast a family meal; half said it was too much of a challenge even on weekends. Pf

Mintel defines functional foods as products that make a distinct, written health claim, possibly enhanced in some way through the addition of ingredients or the act of processing.

This article contains information from the Mintel report "Functional Foods and Beverages, U.S." Please visit http://reports.mintel.com for more information or call Mintel at 312-932-0400.

Website Resources:

www.mintel.com — Mintel Group

www.acsh.org — American Council on Science and Health

www.eatright.org — American Dietetic Association

www.ahpa.org — American Herbal Products Association

www.crnusa.org — Council for Responsible Nutrition

www.herbs.org — Herb Research Foundation

www.ific.org — International Food Information Center

www.nnfa.org — National Nutritional Foods Association

Sell Functions

U.S. Retail Sales of Functional Foods and Beverages, in Millions

Year	Current Prices	% Change	Constant 2006 Prices	% Change
2006 (est.)	$15,369	4.5%	$15,369	1.0%
2005	$14,703	4.5%	$15,218	1.1%
2004	$14,064	2.5%	$15,049	-0.2%
2003	$13,720	2.1%	$15,072	-0.2%
2002	$13,437	3.8%	$15,098	2.2%
2001	$12,943	-	$14,773	-

Source: Based on Information Resources Inc. InfoScan® Reviews Information/Mintel; excludes Wal-Mart

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Turning Protein

Sports drinks have been among the beverage category's strongest growth segments in recent years, as active consumers and those in need of an energy boost have embraced the drinks. Most of the options available feature a blend of carbohydrates and electrolytes, not tremendously different than the first sports drinks introduced decades ago.

Now, Cadbury Schweppes Americas Beverages is adding a new ingredient to the mix with its Accelerade. The company claims it is the first protein-enhanced sports drink with a 4:1 carbohydrate-to-protein ratio.

Why does the product incorporate protein? According to a study published in *Medicine & Science in Sports & Exercise*, individuals who drank a protein-enhanced sports drink during exercise had a 29% improvement in endurance over those consuming a carbohydrate-only sports drink.

Accelerade has been available in powder form for years, but now Cadbury Schweppes Americas is adding it to the ready-to-drink ranks.

Oh Natural

More and more companies are realizing that catering to only one consumer trend is simply insufficient. For its latest launch, Kahiki Foods manages to address three separate trends.

Asian Naturals are natural, convenient and, as the name suggests, are items with an ethnic twist. The range is an eight-item line of restaurant-quality products promising authentic Asian flavors and 100% natural ingredients. Furthermore, the company realizes that its consumers have sophisticated palates and has, therefore, incorporated such ingredients as Szechuan peppercorn, lotus root, edamame and wood ear mushrooms.

The line also touts a feature which has not been widely seen, but which may be a harbinger of things to come. The five items containing chicken in the line all claim the poultry is antibiotic-free; a boast featured prominently on-package.

Back to Black

According to ACNielsen, the super premium tea category is up 168% in 2007, based on sales in all outlets for the year-to-date through May 17. Snapple, already a powerful player in that category, accounting for as much as 71% of the market share, is looking to increase that lead further.

The line has added Classic Black Teas to its "Good for You" beverages. The newest launches are in traditional hot tea flavors such as English Breakfast, Earl Grey and Orange Pekoe.

The new teas will "provide consumers with a traditional hot tea experience in a ready-to-drink offering," explained Bryan Mazur, vice president and general manager of the tea category for Cadbury Schweppes Americas Beverages. "The combination of quality ingredients and time-honored flavors found in the…line result in a truly unique experience."

Saving Enamel

Manufacturers should be warned that the bad press for soft drinks is picking up further steam. Widely disparaged for their sugar content, the beverages are the target of a new study claiming acidic foods could lead to destroyed enamel.

"Sipping or holding acidic drinks in the mouth before swallowing increases the risk of erosion on dental enamel," explains Dr. David Bartlett, author of "Acid Erosion: Why is it Important to My Patients?"

Soft drinks containing the acids break the tooth surfaces, he contends, and the acids also damage tooth enamel over time by dissolving the mineral structure of teeth, thus thinning the teeth.

To prevent the problem, Dr. Bartlett is advising consumers who eat or drink an acidic food or beverage to wait at least 20 minutes before brushing their teeth, so as not to destroy the weakened enamel. Pf

Quick Start

New research from Technomic indicates away-from-home breakfast sales are continuing to grow. However, the daypart still has room to grow, particularly for restaurant operators.

The group finds the "vast majority" of consumers continue to prepare breakfast at home, though they sometimes consume it in the car or at school or work, indicating an increasing need

for time-saving convenience. As Technomic notes, this signals breakfast growth opportunities in both limited- and full-service restaurant segments.

"Breakfast menus are underdeveloped and often lacking in innovation," explains Darren Tristano, executive vice president of Technomic Information Services. "Few limited-service restaurants, for example, offer a separate kids' breakfast menu or a 'healthy' menu." He believes this indicates an opportunity both for chain operators and their suppliers, who often play a key role in bringing menu innovations into restaurants.

According to the research, consumers have very different notions of breakfast on the weekend, as opposed to weekdays. Convenience and portability are the primary selling points of weekday breakfast options. Since the last study two years ago, those ordering breakfast sandwiches when eating away from home during the week grew from 60% to 73%. That is not to say breakfast sandwiches are avoided on the weekend; in fact, weekend breakfast sandwich purchases also grew—from 55% to 60%.

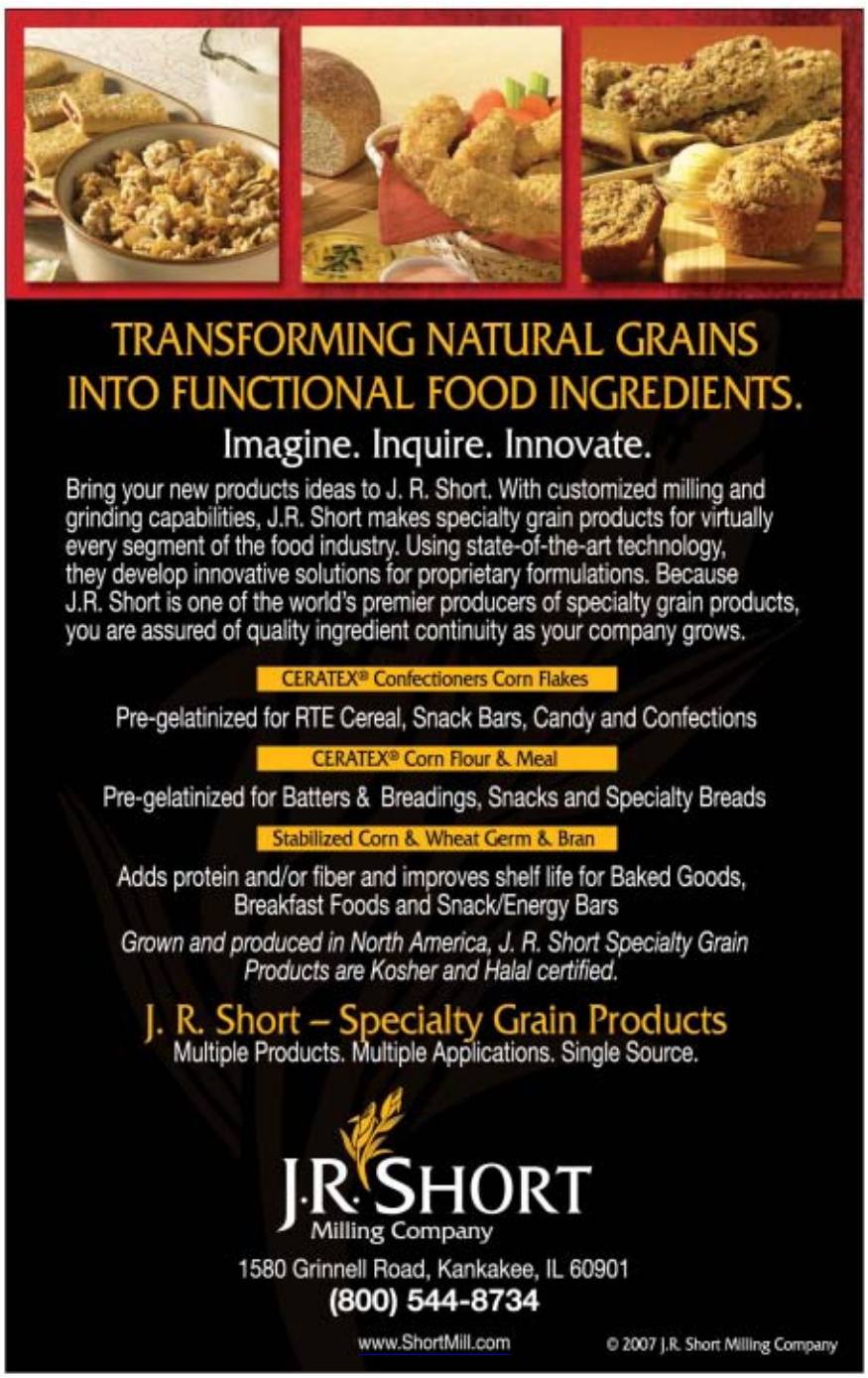
For more information on Technomic's new "Breakfast Category Report," contact Sara Gillis, 312-876-0004, ext. 3848, or sgillis@technomic.com.

Starting Right

Consumer Opinions of Breakfast

% Ordering breakfast sandwiches	73%
Weekend breakfast sandwich purchases	60%
Want breakfast all day	44%
Would order breakfast during non-breakfast hours	43%

Source: Technomic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WEBINAR SERIES

1. September 13th 2:00pm

Introduction to Prebiotics / Beneo™ Inulin 101

Joseph O'Neill, Executive Vice President of Sales and Marketing/ Rudy Wouters, Application Manager/ Veerle De Bondt, Food Applications

An introduction to Beneo™ inulin and oligofructose prebiotic fibers. The unique technical, functional and nutritional benefits of these added-value ingredients will be reviewed for all processed food, dairy, beverage, bakery and supplement manufacturers.

Note: This session will highlight the functional and nutritional benefits of these prebiotics.

2. October 18th 2:00pm

Proven benefits: Life stages with Beneo™

Joseph O'Neill, Executive Vice President of Sales and Marketing/ Anne Franck, Executive Vice President of Science and Technology/ Helene Alexiou, Nutrition Support Manager.

Value of inulin from a nutritional perspective from infancy and childhood to adults and seniors.

Learn about Beneo™ inulin and oligofructose prebiotic ingredients and explore their positive influence on health and well-being. Beneo™ prebiotics provide a healthy solution for every life stage.

Note: Prebiotics and their value added nutrition benefits offer food marketers new opportunities as they address the health concerns of today's consumer.

3. November 15th 2:00pm

Beneo™ inulin and oligofructose prebiotics – taking nutrition and wellness to the next level.

Marketing / Positioning

Joseph O'Neill, Executive Vice President of Sales and Marketing/ Tim Van Der Schraelen, Marketing and Communication Manager/ Pat Fiore, President of Fiore Associates.

Learn how Beneo™ (inulin and oligofructose) prebiotics will help differentiate your product by adding value with proven nutritional and wellness claims. Beneo™ prebiotics address the key human health concerns of today and are positioned as the ingredients of choice in health and wellness products of tomorrow.

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Time to Prioritize

The Food and Drug Administration's Center for Food Safety and Applied Nutrition (CFSAN) has published its list of agency priorities for the fiscal year (FY) ending September 30, 2007 (including to-date accomplishments) in this report to stakeholders.

The report is broken down into a number of different sections, including: FY 2007 Program Priorities; FY 2006 Program Priority Accomplishments; and FY 2006 Other Significant Accomplishments. Below are highlights of just the Program Priorities for FY 2007. Manufacturers may want to review this lengthy document for priorities and accomplishments listed by FDA of particular individual interest. It may be found at www.cfsan.fda.gov/~dms/cfsan607.html.

FY 2007 Program Priorities. Food Defense (1.1.1 "Complete a final rule for prior notice of imported food shipments"); Food Safety (2.0.1 focusing on imported foodstuffs and importers; 2.7.1 advisory labeling of allergens; 2.7.2 gluten-free labeling; 2.1.0 risk communications for a possible pandemic flu outbreak; 2.12.2 develop improved trans fat detection analysis; and 2.14.2 and 2.14.3 BSE); Nutrition/Preventing Obesity (3.1.1 qualified health claims; 3.1.2 functional foods; and 3.1.4 awareness of 2005 Dietary Guidelines); Food Labeling (3.2.1 update daily values in nutritional labeling); and Dietary Supplements and Cosmetics (4.1.1 dietary supplement good manufacturing practices (GMPs); 4.1.1 "per day" labeling).

Priority Ongoing Activities. Food Defense: upgrade Bioterrorism/Food Registration database; Food Safety: modernize current GMP requirements; conduct 5,600 domestic and 100 foreign inspections of high-risk facilities; Food and Color Additives; and Food Allergens: target enforcement of allergen labeling violations; evaluate labeling compliance among imported and small- to medium-sized manufacturers; and reduce allergic reactions among adults by 19% between 2001 and 2010. PF

Mark S. Hostetler is an attorney at Blackwell Sanders LLP. He can be reached at mhostetler@blackwellsanders.com.

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Flavors of the Mediterranean

Many think of Mediterranean food as focusing just on bread, olive oil and wine. However, the use of varying spices, vegetables, fruits and nuts allows dishes to achieve their distinctive regional trademarks.

Craig "Skip" Julius, Contributing Editor

PHOTO COURTESY OF THE CALIFORNIA RAISIN MARKETING BOARD

Couscous is a well-known Mediterranean item, often paired with meats and vegetables to form a complete meal.

Perhaps no other region of the world currently elicits such a rich and romantic food heritage as the Mediterranean. One has a mental image of rolling Tuscan hills, pastoral fishing villages tucked in the clefts of mountains and ancient ruins on the terraced cliffs of sunny Greek islands. In his book *A Mediterranean Feast*, Clifford A. Wright tells us, "The portrait of a historically bountiful Mediterranean is a false one created by romantically minded food and travel writers who believe that what they see today is what must always have been."

The grandeur of the Mediterranean has led to the concept of a culinarily rich Mediterranean that in reality is a late 20th century development based on centuries of evolution. It is precisely this evolution that, over many centuries, defined what Mediterranean cuisine would become. The intermittent confluence of cultures, food supplies, agricultural techniques and cooking technologies all influenced the emergence of many regional cuisines. While all these foods centered on the Mediterranean trinity of bread, olive oil and wine, their distinctive characters came from the use of unique spices, vegetables, fruits and nuts. It is the application of these that identifies a cuisine's "flavor print."

The Cuisine

Mediterranean cuisine is not simply Spanish, French or Italian. It is a mixture of regional food, culture, religion and diverse geography. Today lemons, oranges, potatoes, tomatoes, rice, peppers and coffee might be considered essential elements of Mediterranean cuisine, but they were not cultivated in the classical Mediterranean era. At various points in history, they were brought from Asia, Arabia or the New World, then traded and distributed around the coast over hundreds of years.

The tomato is a classic and stunning example. The red fruit was brought back from the New World by Columbian expeditions in the early 1500s. Nearly three centuries later, the first literary reference for tomato sauce appeared in 1790. It was not popularized in Italian cuisine until the late 19th century. The classic Italian red sauce was 400 years in the making!

The Flavor Prints

The flavors of the Mediterranean are at once diverse and embracing. Beyond its core of olive oil, bread and wine exists a number of herbs, spices, vegetables, fruits and nuts that define each unique regional flavor print.

Mediterranean cuisine is typified by five major techniques. The first is the use of olive oil and garlic, which is integral to the cooking, basting and marinating process in all regions. Secondly, vegetables, sometimes with spices, are combined and caramelized for complex flavor combinations. Some are standard procedures of the cuisine, such as *mirepoix* and *sofrito*. Others, like *ratatouille* and *caponata*, are vegetable stews.

Thirdly, named blends and pastes of herbs and/or spices with defined ratios are commonly used to flavor preparations and widely identified with a specific cuisine. Some examples are *herbs d'Provence*, *ras el hanut*, *za'atar* and *tabil*. Anchovy paste and *gremolata* could also fit in this category.

The fourth technique involves the use of fruits and nuts, which can be combined and cooked in stews or couscous

Mediterranean foods use items such as olive oil, vegetables, fruits and nuts in combinations that differentiate them from country to country. This raisin lamb curry pizza is presented on flatbread—another Mediterranean staple.

PHOTO COURTESY OF THE CALIFORNIA RAISIN MARKETING BOARD

preparations, or used as a topical garnish. Finally, two types of sauces are often employed: 1) Classical French, which involves the use of stocks, and 2) Olive oil-based, often thickened with bread or nuts. Versions of the latter would include pesto, hummus, *salsa verde* and *romesco*.

The Challenges of Authenticity in Manufacturing

Adhering to authentic Mediterranean flavor prints in a commercial kitchen is not a difficult challenge for a trained chef. However, because traditional manufacturing environments typically do not lend themselves well to authenticity, interpreting nuances into a manufactured product requires experience, knowledge and the ability to meet challenges through innovative thinking.

Olive Oil and Garlic

Many operations use vegetable oil instead of the more expensive olive oil, or they use a third-pressed (solvent extracted) olive oil. This enables label claims, but offers no flavor attributes. The aromatic qualities of garlic are totally lost in commercially processed garlic. Sometimes a really good garlic flavor or oleoresin is a better option than commercial pastes or chopped garlic, which can have objectionable off-flavors—often metallic in nature. The same maxim applies for olive oil. Excellent olive oil flavors are available to add authenticity to the product. Even a low-fat product can have that fruity olive oil flavor, or it can be used to boost the flavor of cheaper, more cost effective oils. Certain parts of authenticity can be constructed while maintaining integrity.

Vegetable/Spice Complexes

If one grinds and blends spices, then mixes them with vegetables and cooks them together, something magical happens. The finished product is greater than the sum of its parts. This flavor could never be achieved by simply throwing the same ingredients into a kettle and pumping them through the Contherm. However, by combining high-quality commercial pastes with fresh vegetables and cooking rapidly at high heat so that caramelization occurs, it is possible to achieve a quality product that captures authentic Mediterranean flavor. Some operations make their own pastes in large batches on site using a vertical cutter-mixer (VCM).

A common technique, especially in the eastern and southern regions, involves using ground/pulverized nuts or bread to thicken sauces, stews and soups. No starch or gum, alone or in combination, can mimic this unique texture and flavor. Often the bread is toasted first, resulting in caramelization and non-enzymatic browning reactions, giving a sweetness and color that otherwise cannot be obtained. It also imparts valuable flavors from the volatile compounds arising out of the thermal reactions of toasting. Grinding nuts also releases the oils, further adding unique flavors and textural components.

Mediterranean Food History

A very succinct chronology of Mediterranean cuisine:

- 10,000 B.C.—Early Mediterranean agriculture brings wheat, pelt and rye cultivated from natural wild plants. Fishermen developed anchovy paste.
- 2,300 B.C.—Egyptians made large quantities of mainly unleavened bread and beer. Gardens produced lettuce, onions, garlic, leeks, melons, cucumbers, broad beans and lentils. Fruits such as figs, dates and pomegranate were cultivated.
- 1,700 B.C.—Persian trade with China brought rice and lemons to the diet. Indian merchants traded many spices. Middle Eastern cuisine used thyme, cloves, cardamom, chervil, rosemary and marjoram. Onions, mint, saffron, figs, dates, cherries and pears were cultivated.
- 1,200 B.C.—Sophisticated methods for oil extraction from olives are developed in Syria and Israel.
- 500 B.C.—Greek and Roman diets centered around bread, oil and wine.
- 200 B.C.—Newer crop varieties included beans, carrots, cabbage, turnips and salad greens.
- 1,000 to 1,400 A.D.— The Arab influence advanced cooking techniques (grilling) and introduced spinach, zucchini, eggplant, beets, sour oranges and lemons to the northern Mediterranean.
- 1,400-1,650 A.D.—The Italian Renaissance organized cooking and made it into the art we know today. Crops from the New World included maize, chocolate, tomatoes, potatoes, chilies and squash.

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Olive oil, tomatoes, garlic, pimiento, almonds, pine nuts, saffron, cilantro, paprika and *sofrito* (onions and tomatoes).	Cream, butter, fine herbs, *herbs de Provence*, wine, wild mushrooms, garlic, thyme, tarragon, onions/leeks and shallots.	Olive oil, garlic, anise, tomato, basil, rosemary, sage, fennel, bay leaf, capers, anchovies, lemon, olives and balsamic vinegar.	Olives, olive oil, goat cheese, lemon, oregano, dill, marjoram, honey, grape leaves, spinach, artichokes, eggplant and rice.	Sesame, lemon, yogurt, olives, honey, eggplant, chickpeas, pistachios, pomegranate, cumin, cardamom, nutmeg and *baharat*.	Allspice, mint, honey, citrus, cayenne, chiles, coriander, cinnamon, thyme, sumac, sesame, *harissa*, *ras el hanut*, *za'atar*, *tabil* and *charmoula*.

Each country in the Mediterranean region uses ingredients native to its land.

Cooking Techniques

While all of the above are critical steps to authentic flavors and textures, the cooking technique used may be one of the most commonly compromised areas. Most manufacturing facilities are simply not equipped correctly, especially if the plant is more than seven years old. Equipment is basically set up to mix, cook and deposit. Speed is everything. "Authenticity is for restaurant chefs," as one plant engineer used to tell me (he now works in a different industry).

Recently, some high-tech manufacturing equipment has come to market that provides the high heat and high contact surfaces necessary to duplicate authentic Mediterranean cooking techniques. In an effort to automate the Chinese stir-fry process, Blentech engineers recreated the manual stir-frying

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technique used for centuries in preparing Chinese dishes and incorporated this technique into an automated mechanical process. A hot thermal oil system was designed to provide high temperatures (500˚F) at low pressure to work in conjunction with the mechanical stir-fry device. The machine mechanically stir-fries food on a very large scale and still retains the product quality as if stir-fried by hand. The applications for this wonderful machine go way beyond just Asian stir-fry. The high heat of the oil allows for true caramelization and complex flavor creation.

In contrast, traditional steam kettle cooking is a low temperature, "soft heat" process. The resulting soggy texture is caused by the stewing of product in its own juices due to the low internal heat of the batch.

Heat and Control Company makes some high heat in-line and spiral equipment that, with a little innovative thinking, could produce great results. They also make an in-line fire roaster. Trolley cookers and cavern ovens, long used in the meat cooking/smoking industry, could also provide some alternatives to traditional (but inferior) steam cooking. pf

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Craig "Skip" Julius, CRC, CCS, CEC, CCP, has 30 years of experience as an executive chef in a variety of venues, including hotels, restaurants, country clubs and an NFL football stadium (Lions). Presently, he is a product development specialist with Gordon Food Service. Chef Julius was trained at the Culinary Institute of America and earned a degree in food science and nutrition from Wayne State University. He is a past board member of the Research Chefs Association and the American Culinary Federation, Michigan Chapter. He can be reached at: Skip.Julius@gfs.com.

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1/4 cup Tree Top Pear Juice Concentrate
3 1/2 cups water
Mix together juice concentrates with water until well blended. Fill top half of 24 popsicle molds with mixture and freeze at a 45 degree angle until firm.
Yogurt Base:
1/4 cup Tree Top Pear Juice Concentrate
2 1/2 cups vanilla yogurt
1 tablespoon vanilla
1 tablespoon honey
1 cup water
After pomegranate base has frozen, combine Pear Juice Concentrate, yogurt, vanilla, honey and water in a large mixing bowl. Whisk until smooth. Fill bottom half of the molds with yogurt mixture and freeze until firm.
Yield: approximately 24 bars
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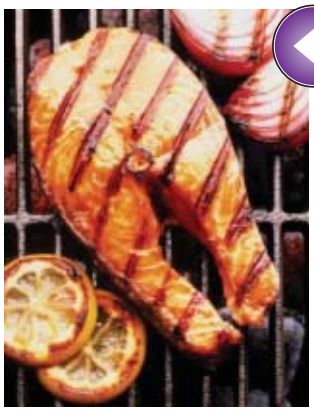
On the National Menu

Maria Caranfa, Mintel



Grilled to Perfection

Grilled is quickly becoming one of the hottest cooking preparations on the restaurant menu. Simply "grilled" accounts for 84% of grilled preparations, with a 5% increase over last year. However, grilled is not just grilled anymore. According to Mintel Menu Insights, char-grilled, mesquite-grilled, flame-grilled, wood-grilled and fire-grilled preparations are infusing rustic flavor into menu items. These grilled presentations have been turning up the heat with double- and triple-digit growth over the past year.

The popularity of grilling is based on its perception as being healthy and the flavor that it infuses into food. Many restaurants incorporate different grilling techniques into menu items that are labeled healthier. Restaurants are specifically creating grilled versions of popular fried menu items. T.G.I. Friday's created Zen Chicken Potstickers—fire-grilled dumplings stuffed with minced chicken and vegetables, sprinkled with *pico de gallo* and served with a sweet and tangy Szechwan dipping sauce. Elephant Bar Restaurant serves Fresh Fire Grilled Catfish with Tropical Fruit Salsa.

Many restaurants, such as Bertucci's Brick Oven Ristorante, have installed open-flame grills to broaden their menus with authentic grilled meals. Bertucci's introduced eight new dishes that focus on the grill, including Salad Firenze with Grilled Steak.

Grilled Comestibles

Popular Grilled Preparations on the Restaurant Menu and Growth over the Past Year, Q4 2005-Q4 2006

Top Grilled Methods	Growth
Grilled	5%
Mesquite-grilled	3%
Flame-grilled	87%
Wood-grilled	30%
Fire-grilled	98%
Hardwood-grilled	53%
Skillet-grilled	380%
Herb-grilled	100%

Source: Mintel Menu Insights

Going Green

The restaurant industry is going green. The National Restaurant Association (NRA) has formed a new task force, the Green Task Force, to take the lead on implementing the association's environmental initiative. The task force aims to encourage the nation's 935,000 restaurant and foodservice outlets to adopt practices that are good for both business and the environment. According to the NRA, the goal of the overall initiative is to "identify practices that conserve energy, water and other natural resources; increase recycling; and encourage the creation and use of sustainable materials and alternative energy sources that also reduce operational costs for restaurants."

The green initiative by the NRA is in line with consumer behavior and needs. According to Mintel Reports, 35 million Americans are "True Greens," those who regularly buy green products. However, consumers from all income categories have the ability to be green. Green marketing could be very profitable for the restaurant industry. More than three in four consumers polled by Mintel Reports changed their purchasing habits due to a company's green image.

Green living puts a focus on organics. According to Mintel Menu Insights, organic ingredients have increased by 64% on restaurant menus of all dining types. Restaurants such as Panera Bread Company have altered their menus to include organic ingredients that appeal to parents, as well as introduce children to organics. Panera offers squeezable organic yogurt and a choice of organic milk, organic chocolate milk or organic apple juice alongside organic and natural children's menu items. pf

"Organic" on Menus

Number of Organic Ingredients on Restaurant Menus of all Dining Types, Q1 2005-Q4 2006

Q1 2005	151
Q2 2005	229
Q3 2005	213
Q4 2005	257
Q5 2006	341
Q6 2006	350
Q7 2006	378
Q8 2006	389

Source: Mintel Menu Insights

Fat-finding Mission

Fats and oil suppliers are striving to present nutritional fats that provide the functionality and benefits required by formulators. Trans fat alternatives continue to be a challenge.

Elizabeth Mannie, Contributing Editor

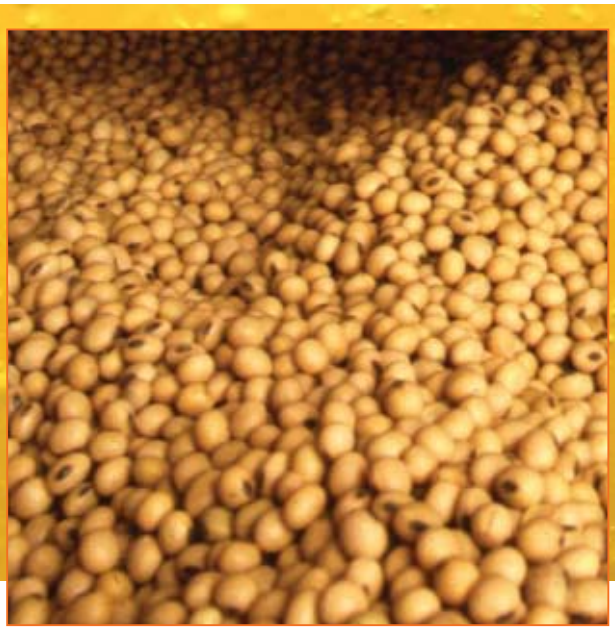
While fat is frequently made out to be the bad guy, it is a necessary nutrient and functional ingredient in a wide range of foods. According to the USDA Foreign Agricultural Service, world demand for vegetable oil has grown at an average rate of 4%-5% annually with expanded consumption of salad oils, baking and frying fats and margarine. When consumed in recommended amounts and types, fat can contribute to a healthy, enjoyable diet.

Research suggests that the correct balance of omega-3 and omega-6 fatty acids is beneficial to health. Soy and canola oils contain high levels of both. Monounsaturated fatty acids (MUFA) such as oleic acid may also lower cholesterol levels. MUFA can be found in most major vegetable oils, and it is especially prevalent in olive and canola oils.

Scientists will continue to delve into the complex issue of fats and health. At times, studies may provide information that flies in the face of commonly held assumptions. For example, in a January 2007 e-newsletter, Decision Media reported on research by Malin Haglund Garemo, a dietician from Gothenburg University in Sweden, indicating that a higher intake of fat was associated with lower body weight in children and that a higher BMI (body mass index) was associated with a higher sugar intake.

Removing Trans Still a Top Priority

"Food processors and foodservice operators face similar challenges in moving toward reduced-trans/no-trans solutions. They must try to keep the taste, texture and functionality that their customers expect of their brands, while often significantly modifying their formulations. In doing so, formulators can encounter several problems which are being solved by extensive testing of different combinations of ingredients," states Frank Kincs, director of R&D at a well-known fat and oil supplier.



"The biggest problem," states Joe Higgs, vice president of R&D technology at a fat and oil supplier, "is in replacing structure provided by the solids in fat. Solids come from two sources, saturated fat and trans fat. When removing the trans, the saturates need to increase in order to maintain the structure of the fat. Another problem is that the end user wants a 'drop in' replacement product, exactly like what they had before. When blending different oils, it is necessary to formulate to an acceptable end product and not just try to match solid fat index (SFI) curve of the original fat. It is possible for two fats to have different SFI curves yet function the same with some modifications to the mixing and baking process."

"In baking, fats currently being used to replace trans fat-containing hydrogenated oils include palm oil shortenings, animal fat-based shortenings, interesterified oils and trans-free hydrogenated oils, which are made using exotic catalysts for hydrogenation without the formation of trans isomers. There is also a high stearic soybean oil in development that will have some baking functionality but is still three to five years away," states Richard Galloway, consultant to the United Soybean Board.

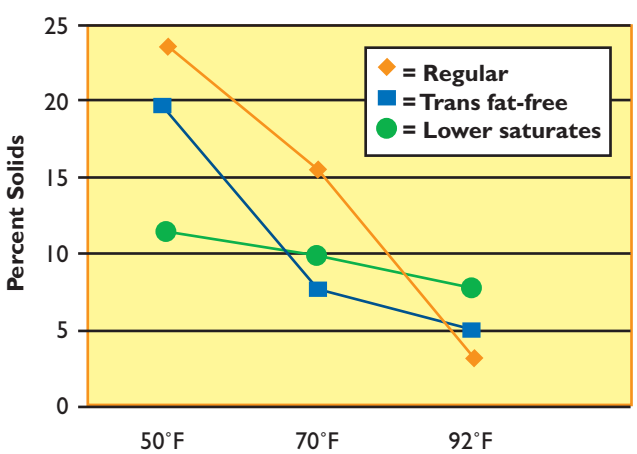
Manufacturers are also testing blends of liquid oils and fully saturated oils with no trans isomers as substitutes for trans-containing fats in margarines, spreads and shortening applications.

Frying Applications

"Frying fats are different from baking fats because 'fry life' is necessary. Unsaturated fats are more susceptible to breakdown, so keeping their level as low as possible is desirable for frying. This accounts for the growth in demand for high-oleic and low-linolenic oils such as high-oleic canola and sunflower, and low-linolenic canola and soybean oils. These oils are becoming a popular alternative to partially hydrogenated fats for frying," contributes Higgs.

> The regular margarine is most solid at 50°F, but at 92°F, all of the margarines have little solid fat. It is possible for two fats to have different SFI curves yet function the same with some modifications to the mixing and baking processes.

SFI Curve for Margarines (Regular, Trans-free, and Low-saturate)



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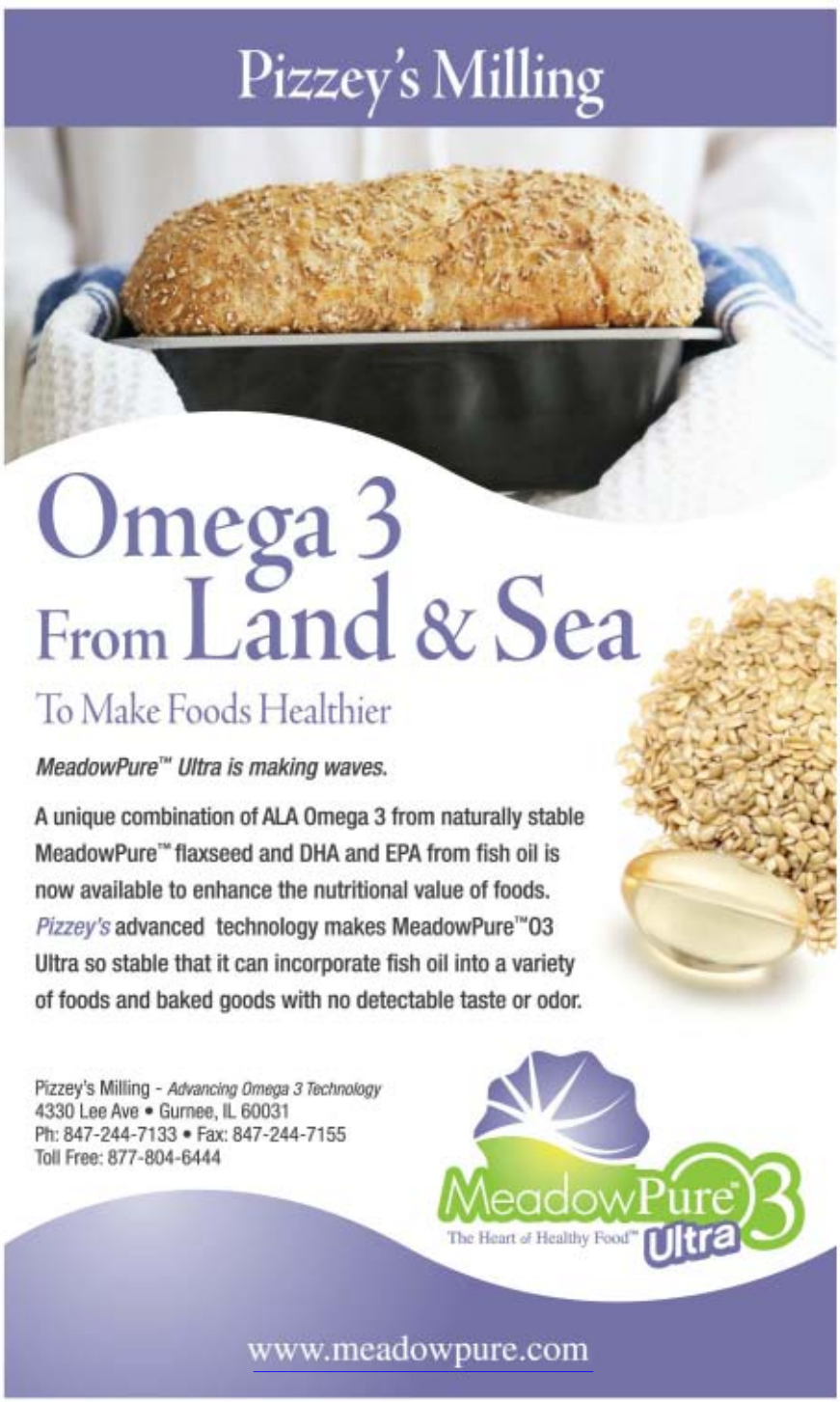
"An option for frying is to reduce the linolenic content. Linolenic acid contains three double bonds and is the most unstable of the common fatty acids," states Higgs. "Low-linolenic oils are available in soybean and canola oils. In addition, 'mid-oleic oils' are low in linolenic and have reduced linoleic (two double bonds) to increase stability and are currently available in sunflower oil. A mid-oleic soybean oil is currently being developed," he adds.

"Low-linolenic soy oil can replace trans fat in lighter duty frying applications, as it has excellent flavor stability and resists oxidation without hydrogenation," explains Galloway. Many applications that previously required lightly hydrogenated oils can achieve equal functionality with low-linolenic soybean oil, as seen, for example, in Kentucky Fried Chicken (KFC) and Kellogg's products. KFC announced a switch to low-linolenic soybean oil for frying in all of its 5,500 U.S. restaurants. Since the switch, KFC's products, including Original Recipe and Extra Crispy chicken, contain 0g of trans fat per serving.

With a formula that qualifies for 0% saturated and trans fat listed on the Nutrition Facts panel, Gerber Product Co.'s new Graduates Crackers use "ultra low linolenic soybean oil" to reduce rancidity tendencies.

Interesterified Oils

A variety of products have been commercialized using enzymatically interesterified domestic blends of soybean oil and hydrogenated soybean oil as well as 95% palm kernel oil produced using immobilized lipase technology. These materials are used as margarine, spread and shortening-based stocks. The domestic products are typically made by enzy-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matically interesterifying a blend of soybean oil with fully hydrogenated soybean oil. By varying the level of fully hydrogenated oil (hardstock), the melting and functional characteristics of the fat can be modified, contributes Tom Tiffany, senior marketing manager at a fat and oil supplier.

Tiffany continues, "Enzymatic interesterified shortenings and margarines utilizing soybean oil and fully hydrogenated soybean oil tend to be rich in stearic, omega-6 and omega-3 fatty acids. The American Heart Association has indicated that stearic acid may not affect or may even lower blood cholesterol. When soybean oil is used as the liquid portion of the blend, the levels of omega-3 and omega-6 fatty acids are also increased, compared to palm oil or partially hydrogenated vegetable oils used for similar applications." He adds, "FDA has stated that when foods are formulated with interesterified soybean oil, the descriptor 'interesterified soybean oil' can be used in the ingredient statement."

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Other Oils

In deciding upon a type of oil to use in a formulation, the fatty acid composition plays a role in the oxidative stability of the food. Oils with high levels of polyunsaturated fatty acids are more prone to develop off-flavors. Other considerations include nutritional profiles and labeling.

"Canola oil is low in saturated fats, and when used in the right amounts by food manufacturers, the product may qualify for a health claim involving saturated fat. High-oleic canola oils provide good shelflife without hydrogenation. They can be two and a half to three times as stable as

In baking, fats currently being used to replace hydrogenated oils which are high in trans fat include palm oil shortenings, animal fat-based shortenings, interesterified oils and oils using exotic catalysts for hydrogenation without the formation of trans isomers. The formulation of these South Beach Diet Cookies from Kraft Foods relies on high-oleic canola oil for help with a 0g trans fat label

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traditional soy or canola oils. They are often used in fryers and as spray oils," adds Kincs.

"Some of the reasons a manufacturer would choose soy oil over other oils is that soybean oil provides a broader range of flavor-neutral functionality than either corn or olive oil. Canola oil suffers more from light-duty frying than does soybean oil. And from a sheer volume standpoint, soybean oil production in the U.S. exceeds all other edible vegetable oil production by about three-to-one," explains Galloway.

Butter

"Of course, butter came before all of the customized vegetable fats used today. Butter has its own unique functions that have been mimicked through the development of shortenings and margarines. Butter provides different characteristics than other fats. For instance, butter provides flakiness to pastry and tenderness to cookies. Poundcake has a 'melt in your mouth' quality because of butter. Also, butter provides a buttery flavor to all baked products it is used in. Butter does have a shorter shelflife and less flavor stability than some fats and oils. It also needs to be stored at refrigerated temperatures and sometimes tempered before use. Butter has a premium image in food products like baked goods, confections, sauces and entrées, and also has better label appeal than hydrogenated and other processed fats," notes Kimberlee Burrington, dairy ingredient applications coordinator at the Wisconsin Center for Dairy Research.

"Butter is also evolving into different products to meet the need of manufacturers. New technologies include fractionation, which has been researched extensively and commercialized by New Zealand and European companies," adds Kathy Nelson, applications lab coordinator at the Wisconsin Center for Dairy Research. "A lot of work was done at the [center], but no U.S. companies have com-

Manufacturers are experimenting with margarines, spreads and shortening applications by substituting trans-containing fats for blends of fully saturated oils with no trans isomers and liquid oils.

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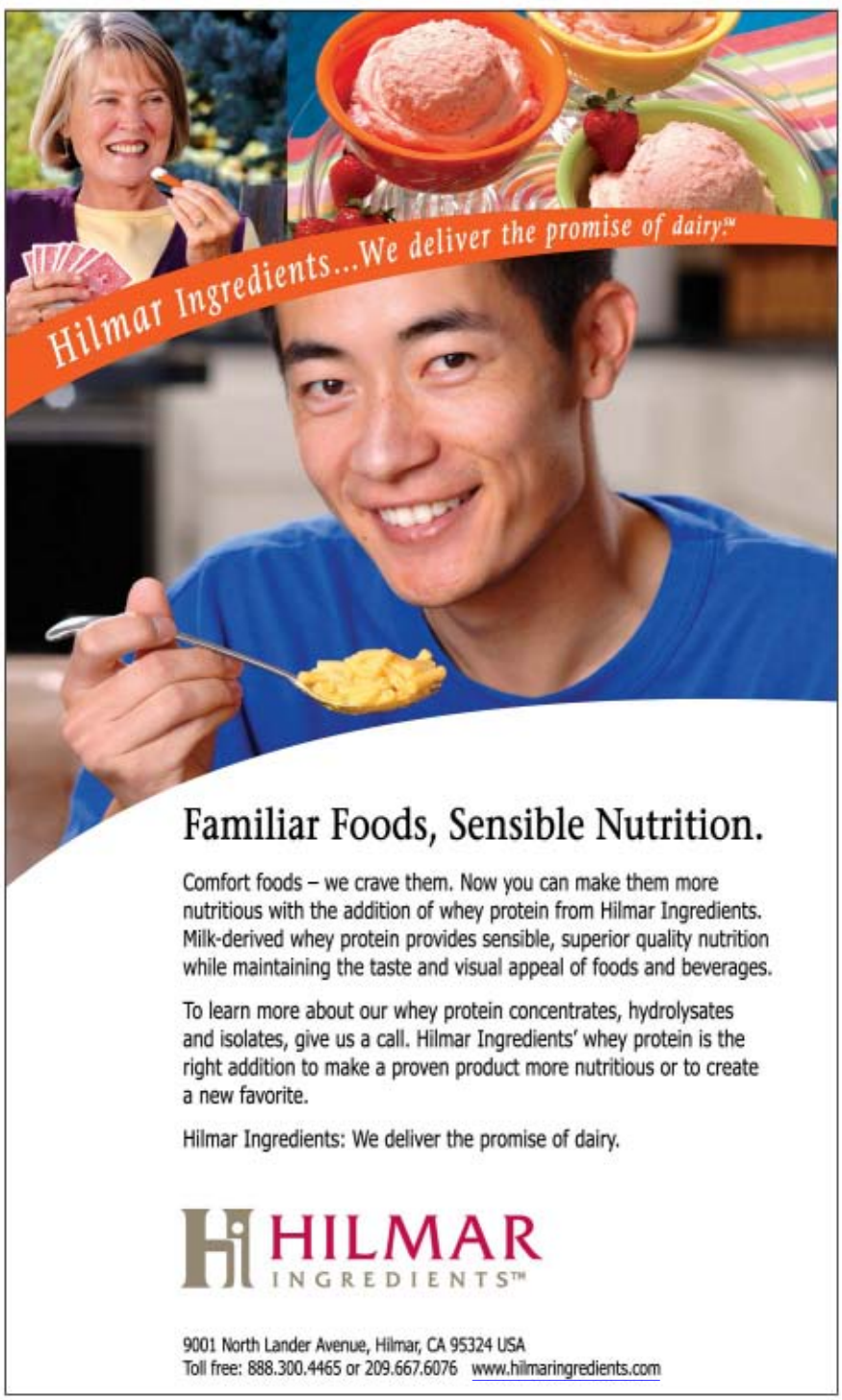
mercialized customized butters using this technology. Partially, this is because butter has maintained a very high price in the market, so it has not made economical sense to add more value to butter by customizing it."

Butter blends with margarines can be a good consideration for certain applications, because they can be customized to provide specific functionality and flavor.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Other Oil Topics

"We are working on several oil products under the category of more healthful oils that are not only reduced in trans fat but actually have improved nutritional profiles. One example is a vegetable oil produced from a proprietary process. It is metabolized by the human body more rapidly than traditional vegetable oils and actually inhibits the body's ability to absorb cholesterol. These attributes combine to present a vegetable oil that helps maintain the desired weight and lower LDL cholesterol, when used as a replacement for traditional cooking oils," adds Kincs.

"Reducing saturated fat in trans-free products is a big issue and most difficult to fix," explains Higgs. In addition, there are genetically modified organism (GMO) issues in a lot of the new oils, because they are GM or contain a genetically modified trait like Roundup Ready."

"Another current project is to modify the partial hydrogenation process to produce low-trans alternatives. Work is being done with process variation to minimize trans formations with enough reduction in C18:3 to create an oil with decent oxidative stability. The oils can then be used in blends to provide the end user a product based on commodities such as soybean oil," adds Tiffany.

"Suppliers are offering customized blends of oils to achieve food processor functionality and nutritional requirements. Traditional oils, identity-preserved oils such as low-linolenic and high-oleic soybean and canola oils, palm oil, palm kernel oil, animal fat options and interesterified oils comprise some of the offerings," contributes Kincs.

To address a further nutritional need, a vegetable oil that contains iodine has been developed. Suppliers promise that more innovations are on the way, but they cannot share any more information publicly at this time...stay tuned for more news. Pf

Website Resources:

www.zerotranssoy.com — Facts on soybean oil, low-linolenic soybean oil, interesterification, reducing trans fat

www.innovatewithdairy.com/InnovateWithDairy/Articles/DBV_TransFat_032404.html — Article explains the naturally occurring trans fat found in dairy

www.bunge.com/industry-information/vegetable-oil.html — Vegetable oil information

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Phosphates and Yeasts in Baking

Phosphate and yeast leavening agents are key ingredients in baked goods. Factors that determine the best ingredient for an application include product type, processing conditions and end user.

Elizabeth Mannie, Contributing Editor

Self-rising pizza uses a combination of yeast and chemical leavening. The chemical leavening allows for very little proof time, and the yeast provides the traditional "yeasty" pizza flavor.

In the baking industry, leavening agents are key ingredients that give baked goods their signature rise. Both yeast and chemical leavening will produce the carbon dioxide that raises or leavens products. Chemical leavening is sometimes substituted for traditional yeast or used in combination with it to serve particular baking needs. Factors that help determine the best leavening ingredient for the job include product type, processing conditions and end user.

Yeast

Yeast, a living organism, is activated by moisture, heat and food. Through fermentation, yeast converts dough carbohydrates into carbon dioxide and ethanol. The resulting gases provide the rise in volume of the dough and give lightness to a loaf of bread. Yeast also affects dough rheology through oxidization and causes the dough to become elastic. Additionally, yeast adds a unique flavor and bread-like texture to baked goods.

Yeast appears in various types and forms including liquid, compressed and crumbled. Different types of yeast can be used interchangeably by adjusting the liquids in a recipe. Instant yeast was developed to rise more rapidly and can be added directly to the flour without initial rehydration. When instant yeast is used, the first rise or proof can be replaced with a 10-minute rest, greatly reducing proof time.

Formed yeast items are put into a heat- and humidity-controlled fermentation cabinet for proofing. Fermentation time varies, but it can take up to an hour or more to raise a product to nearly its full height. More volume is gained in the first few minutes of baking before the yeast cells die from the elevated heat.

Although yeast can be a flexible ingredient, it does have its own limitations that must be considered. "Yeast is negatively impacted by both chocolate and cinnamon. For this reason, when these ingredients are used in yeast products, they are typically rolled into the dough, such as with cinnamon rolls, or drizzled on the dough, instead of being mixed into the dough with the yeast. Salt also affects yeast growth. Too much salt inhibits yeast growth, but too little salt negatively affects flavor and causes too much yeast growth, which results in a collapsed loaf due to over-ris-

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Vice President,
Technical Services
The Hain-Celestial Group

"The event exceeded my expectations. We found it very beneficial to meet with existing suppliers along with those we did not know. We were shown resources and product lines that we were unaware of prior to the meetings. Great use of my time."

— Michael Maney,
Vice President Quality Assurance / Research & Development
Dean Specialty Foods Group

In a cake, typically a fast leavening agent such as MCP will be used with SALP. MCP provides the initial reaction and helps to set the desired cell structure. SALP then provides maximum expansion and volume to the finished cake.

ing," explains Diana McElroy, a registered dietitian at a well-known yeast supplier.

As baking science has advanced, chemical leavening agents have been created, and according to John Brodie, bakery technical service manager for a leavening supplier, "The mechanism for yeast is vastly different than for chemical leavening." Consequently, the chemical leaveners have their own individual attributes.

Phosphates

Leavening phosphates are an acid in which a basic bicarbonate source needs to be added, the most widely used source being sodium bicarbonate (baking soda). The leavening acid liberates the carbon dioxide from the bicarbonate at various speeds, depending on the type of leavening acid used.

Phosphate leavening agents are selected based upon NV (neutralizing value), rate of reaction, processing conditions, product format, convenience and health aspects. NV is a measure of how "strong" the acid is and helps to determine how much acid is required in the formulation. NV is generally expressed as the parts of sodium bicarbonate that are neutralized by 100 parts of leavening acid. The range of NV in available leavening acids is from 33 to over 100.

There are three main types of leavening phosphates: calcium phosphate (monocalcium MCP and dicalcium phosphate DCP), sodium aluminum phosphate (SALP) and sodium acid pyrophosphate (SAPP). From these three, suppliers have developed products with unique characteristics for specific applications.

Neutralizing value is the measure of available acidity in leavening acids. The value is used to determine the amount of acid(s) required when combined with 100 pounds of sodium bicarbonate to neutralize the pH, which releases all of the available carbon dioxide into the dough system.

"One popular leavening agent preferred by the baking industry is sodium aluminum phosphate, because it is heat-triggered, provides excellent volume and consistent finished product characteristics," contributes Barbara Heidolph, market development manager at a supplier of phosphate leaveners to the baking industry.

Calcium acid pyrophosphate (CAPP) was developed to aid bakers in formulating healthier products that contain a good source of calcium without additional sodium. CAPP can be used in dry mix, frozen and refrigerated systems in place of traditional leavening acids to achieve specific nutritional targets for sodium reduction or calcium fortification. "When CAPP is used to replace SAPP, bakers can achieve significant, sometimes greater than 25%, reduction in sodium, still maintaining desired volume. CAPP provides a clean flavor profile preferred by many to SAPP. There is no sodium taste, astringency or off-flavor," adds Heidolph.

"SAPP can contribute a 'pyro' aftertaste, where SALP and calcium phosphates are neutral in taste. SALP gives a soft, resilient texture, where MCP (monocalcium phosphate) will give a slightly firmer texture. SAPP gives a soft texture but is not as resilient or 'springy.'" SALP is mainly heat reactive, where the MCP releases more carbon dioxide at room

Neutralizing Value

Leavening Acid	Neutralizing Value	Lbs of Acid to Neutralize 100lbs of Sodium Bicarbonate
Monocalcium phosphate (MCP)	80	125
Monocalcium phosphate anhydrous	83	120
Dicalcium phosphate dihydrate (DCP)	33	303
Sodium aluminum phosphate, acidic (SALP)	100	100
Sodium aluminum phosphate, acidic w/aluminum sulfate anhydrous	100	100
SALP w/coated MCP	95	105
Sodium acid pyrophosphate (SAPP)	72	139

Source: Innophos Inc.

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temperature. SAPP reacts from fast to slow, depending on the type (there are five or more types of SAPP), explains Brodie.

Reaction Rate

There are basically three types of reaction rate: fast, time-delayed and heat-triggered. Fast leavening agents provide nucleation during mixing and help establish the grain of the final product. In high-temperature baking, these agents can be very important in providing rapid early expansion.

Time-delayed leavening acids provide bench or floor time. They are designed to react after a certain period of time. This is particularly important in operations where there are large batches or where a dough or batter will be processed over an extended period of time.

Heat-triggered leavening agents undergo the majority of their reaction after an activation temperature has been reached. In general, activation temperatures are greater than 100˚F. "This delay based on temperature activation provides the ultimate in bench tolerance or floor time," states Heidolph.

Common Yeast Problems and Causes

Problem	Possible Causes
Slow or no rise	■ Temperature too hot or too cold ■ Too much flour ■ Too much salt ■ Too much sugar ■ Yeast expired ■ Dough not kneaded long enough ■ Garlic, onions, cinnamon, molasses, honey, fruit and juices all can slow yeast growth ■ Not enough proof time
Small loaf	■ Pan too large ■ Oven too hot ■ Not enough proof time
Holes in bread	■ Air holes not punched down ■ Not enough proof time ■ Too much yeast ■ Liquid too cold
Dry or hard bread	■ Oven temperature too high ■ Too little fat in formula ■ Excess flour
Strong yeast flavor	■ Proof temperature too high
Sour taste	■ Too much salt
Cracked crust	■ Too much flour ■ Oven temperature uneven ■ Not enough proof time
Tough crust	■ Not enough proof time ■ Excess dough handling

Source: Fleischmann's Yeast

Pizza

"Self-rising pizza is one item that often uses a combination of yeast and chemical leavening. It requires very little to no proof time and relies on the chemical leavening to raise it in the oven. The yeast provides some initial carbon dioxide and gives the pizza its traditional 'yeasty' flavor. More and more bakery producers are finding the value of using chemical leavening in traditional yeast products. For frozen ready-to-bake rolls, some yeast is used to achieve fermentation volume; the product is then frozen. The end user puts the rolls directly from freezer to oven, where the chemical leavening provides the final volume in the oven," adds Brodie.

> Yeast is sensitive to temperature, salt, sugar and dough handling; therefore, all must be balanced accordingly in a yeast-risen formula.

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Refrigerated dough products are generally stored in packaging that helps retain the carbon dioxide under pressure.

Cake

Chemically leavened products like cake often require a combination of acids. This is driven by the profile necessary for carbon dioxide release. In cake, typically a fast leavening agent such as MCP will be used with SALP. The fast leavening agent provides the initial reaction and helps to set the desired cell structure. SALP then provides maximum expansion and volume of the finished cake.

Frozen Products

In frozen products such as unbaked frozen biscuits, a combined system of leavening acids performs best. "A slow SAPP along with SALP provides the ideal combination of bench tolerance—delayed reaction allowing the processor to get the dough frozen, combined with ultimate storage stability and maximum bake performance," adds Heidolph.

Dry Mix

For dry mixes the key consideration is to ensure leavening stability during storage to prevent pre-reaction of the bicarbonate. Although a leavening acid like MCP may be involved, other factors such as flour moisture, storage temperature and particle size of the bicarbonate also contribute to storage stability.

Refrigerated Doughs and Batters

Generally, refrigerated doughs are stored in packaging that helps retain the carbon dioxide under pressure. The classic example is canned refrigerated dough. In these applications, slow leavening agents like SAPP and SALP are used; they allow the dough to be processed and placed in the can. Once the can is sealed, the leavening reaction occurs. When the product is baked, the carbon dioxide expands and provides volume.

Refrigerated batter products generally are formulated with heat-triggered leavening systems in order to minimize any reaction during storage. SALP or SALP in combination with MCP is preferred.

Encapsulation

Leavening acids and bicarbonate are available in encapsulated formats. The protective coating allows leavening gas to be released only at a specific time or after specific conditions have been met. A coating of fat will delay gas release until the coating is melted (temperature delay). When water-soluble coatings are used, the gases are released only after a specific amount of time.

Encapsulation may help in applications where a standard leavening acid will not

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provide the desired outcome on its own. Examples are products requiring refrigeration for long periods of time, where even heat-triggered leavening agents can eventually undergo hydrolysis and low levels of pre-reaction. Encapsulation does add additional cost to the formulation, however, and is generally not preferred.

Reaction Considerations

There are times when ingredients in a bakery formula react with sodium bicarbonate, either in a dry state or in a batter or dough, causing the carbon dioxide to release prematurely. Acidic ingredients like fruit or juices, buttermilk and organic acids added for other purposes can cause such reactions. Ultimately, these acid components reduce the overall quantity of carbon dioxide available to lift and expand the product, leading to poor volume or coarse crumb structure.

"Another consideration is the effect of the leavening system on the final pH of the baked product. The pH can impact color of the grain and crust. The lower the pH, the whiter the crumb appears. With regards to crust, it has less browning with lower pH. At higher pH, crumb is more yellow or creamy in appearance and crust has potential to be darker brown," adds Heidolph. Brodie offers that, "chocolate cakes often use excess sodium bicarbonate, increasing pH, thus having a darker color. The amount of leavening used also affects the finished volume. Trials are typically done to optimize the amount and types of leavening used."

The pH can also impact the color of inclusions such as blueberries or the crumb around them can take on a "greenish cast instead of blue," advises Heidolph.

There are times where encapsulation can be used to help prevent negative interactions, especially in yeast systems, as yeast activity can be inhibited by a number of factors including pH, sodium chloride, ions and preservatives. Thanks to discoveries in chemical leavening, manufacturers can produce consumer-friendly options using cost effective processes. pf

Website Resources:

www.PreparedFoods.com — Editorial archives searchable by key words or phrases related to phosphates, yeasts and/or baked goods

www.astaris.com — Information on phosphate ingredients for the food industry

www.breadworld.com — Information on yeast used in baking; conversions, substitutions, frequently asked questions

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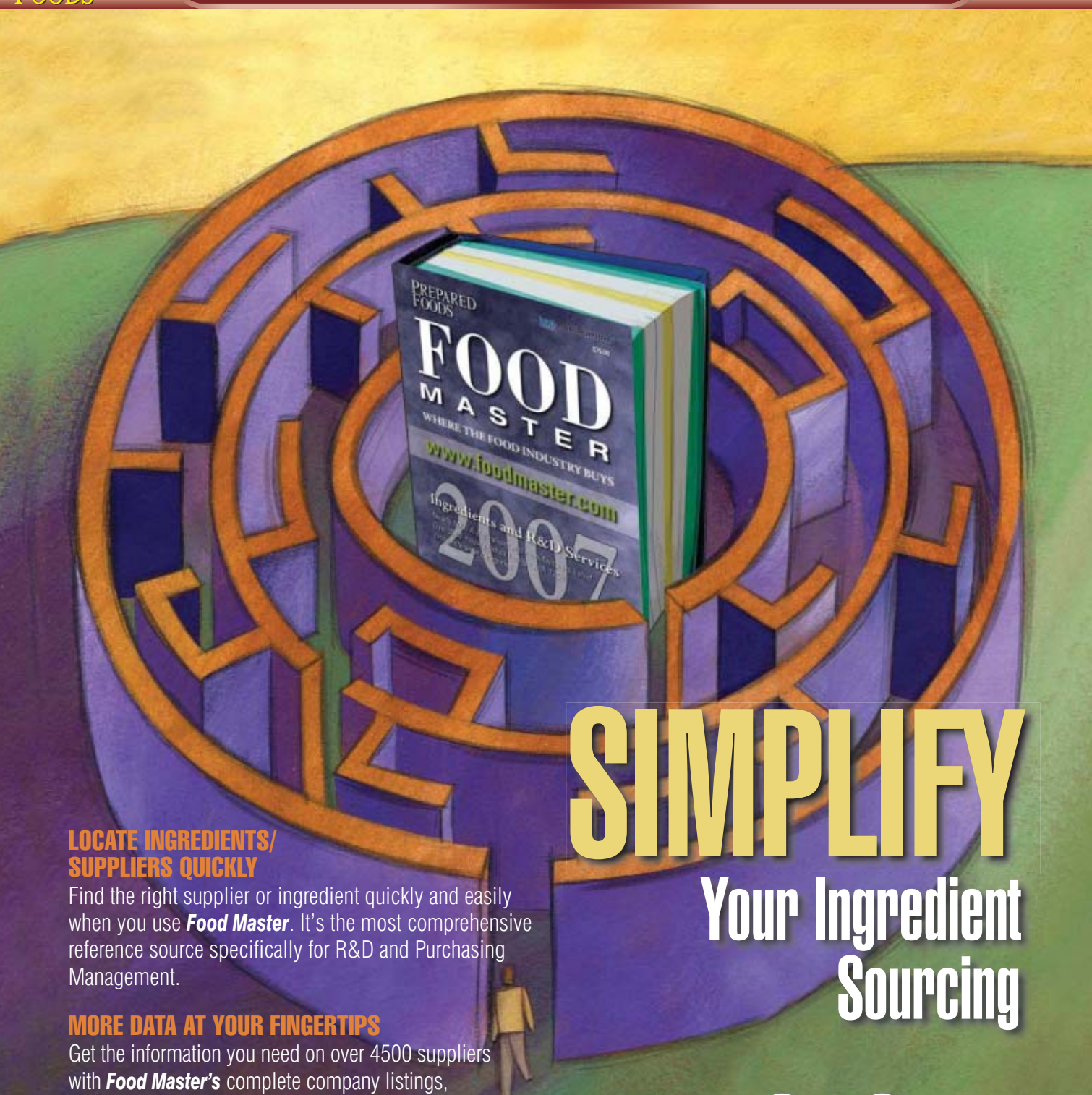

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Opportunities and Challenges of Gluten-free Products

The number of people looking for gluten-free food products has increased dramatically. Those who suffer from celiac disease make up only part of this group. Many consumers go gluten-free because of the numerous health benefits and taste opportunities.

J. Hugh McEvoy (a.k.a. Chef J), Contributing Editor

The greatest challenge in creating successful new gluten-free products may be in understanding them. As food developers, we must clearly understand what it is we are trying to create. Who is buying gluten-free products? What do they want? Why do they want it?

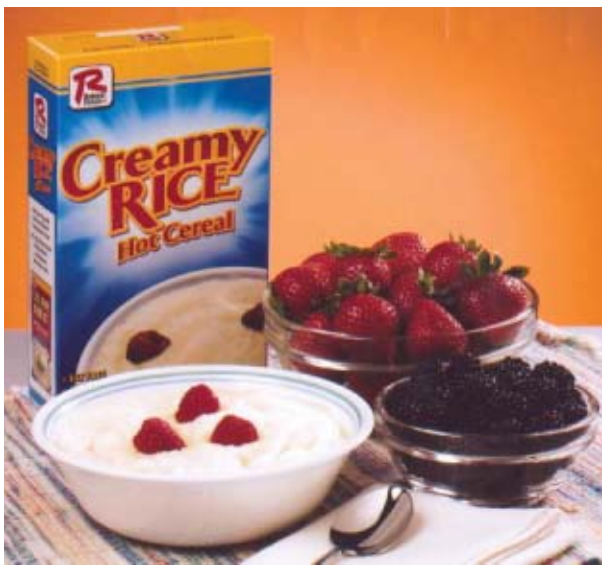
What is Gluten-free?

Labeling of new gluten-free food items is still a bit tricky. The Food Allergen Labeling and Consumer Protection Act (FALCPA) went into effect January 1, 2006. Food items containing any of the "big eight" allergens must include a warning statement as of that date. Wheat is the first item on the allergen hit parade. Milk, eggs, tree nuts, soy and fish also require a label statement. However, the gluten in wheat has put that grain on the top of the list. The anticipated second part of FALCPA defines gluten-free. Under the proposed rule, gluten-free is defined as containing less than 20 parts per million [ppm] of gluten. Gluten-free for label/claim purposes means that the food product must not contain:

- Any ingredient that includes derivatives of any species of wheat, rye, barley or any crossbred hybrid of these grains, collectively known as prohibitive grains. The FDA is not, at this time, proposing to include oats in the definition of a prohibitive grain.
- Any ingredient that is derived from a prohibitive grain that has not been processed to remove the gluten, resulting in more than 20ppm of gluten.
- Any food made from oats, or any ingredient derived from oats that bears a gluten-free label claim would be deemed misbranded if the claim suggests that all foods containing oats or derived from oats are gluten-free.
- A food shall be considered misbranded if it is inherently gluten-free and does not also refer to all foods of the same type as also being gluten-free (*Today's Dietitian*, April 2007, Vol. 9).

These label restrictions are driven primarily by the seriousness of celiac disease (CD) and its sufferers' high level of gluten sensitivity.

The Food Allergen Labeling and Consumer Protection Act (FALCPA) went into effect January 1, 2006 and requires foods with any of the "big eight" allergens to include a warning statement. An anticipated second part of the FALCPA proposes defining "gluten-free" as containing less than 20ppm of gluten.



In its introduction of Ralston® Creamy Rice, Ralston Foods promotes the rice-based cereal as being ideal for people diagnosed with celiac disease.

Celiac disease is a chronic inflammatory disease that predominantly affects the small bowel. The result is an immune-mediated intolerance to ingested gluten, which is the storage protein of wheat. Clinical manifestations include diarrhea and numerous other sequelae of malabsorption, non-specific gastrointestinal disturbance and a host of extraintestinal phenomena affecting the skin, joints, teeth, nervous system, energy level and mood.

Virginia Erwin is a private practice nutritionist who has worked extensively with gluten-free diets. "There is a lot of misinformation floating around out there and, unfortunately, many people who have CD are paying the price," Erwin says. "Though some of the increased incidence of CD being reported may be due to better screening and testing procedures, it is a serious issue."

She adds, "Children with celiac disease are at greater risk for developing health problems due to malabsorption of vital nutrients such as iron and folate. One of the biggest factors in helping people with CD is teaching them how to read labels and ask a lot of questions about gluten contained in food that is not prepared at home in their own gluten-free kitchens. Proper labeling of gluten-free foods is becoming ever more important."

Celiac disease appears to be more common in the U.S. than previously thought, and there is evidence that it is under-diagnosed. A growing number of Americans do

Showcase: Proteins, Gums and Starches for Gluten-free Products

Egg products are the perfect ingredients for those looking to formulate gluten-free foods. One of gluten's main functions is to provide structure to foods. A logical replacement for gluten would be another functional protein such as egg protein. **Egg proteins can thicken sauces, gravies, smoothies and provide structure in gluten-free breads.** Plus, they have coagulative properties to bind food products such as snacks, processed meats and prepared entrées. Eggs products can help achieve a gluten-free label. American Egg Board, Elisa Maloberti, 847-296-7043, 877-488-6143 (toll free), emaloberti@aeb.org, www.aeb.org

Gluten-free bread and bakery applications often lack that "homemade" bread taste and appearance, especially if they do not incorporate starches. Penford Food Ingredients Co.'s research has indicated that **a combination of a pregelatinized starch with cook-up starches works synergistically to restore the attributes lost by removing wheat flour.** Pregelatinized starches, such as PenPlus® 2510 tapioca starch, assist in providing dough elasticity and resilience. Cook-up starches, like PenBind® 150 tapioca starch, add volume and structure to bakery products. Penford Food Ingredients Co., Steve Smith, 303-645-0171, ssmith@penx.com, www.penfordfoods.com

According to the Center for Celiac Research, approximately one in 133 Americans may suffer from celiac disease. NUTRALYS®, a family of gluten-free, non-allergenic proteins derived from yellow pea, delivers unique nutritional value and excellent functional properties to many applications. With 85% protein and a rich amino acid profile, NUTRALYS **offers high emulsion/gel properties and stability to gluten-free products**. This highly digestible (98%), all-natural, GMO-free protein provides low viscosity and free-flowing, easy mixing capabilities to food processors. Roquette America, Chandani Perera, Chandani.perera@roquette.com, www.roquette.com

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Your technical meetings are customized based on your product development challenges. Your meetings are highly productive because the suppliers know your specific challenges and are prepared to discuss solutions, share new technologies, unveil early prototypes and explore potential partnerships.

Prepared Foods' **PIX** is a highly efficient investment of your time. In 2 days you can participate in more than a dozen senior level, strategic product development meetings. To duplicate this in your office, might take 6 months.

ProductInnovationXchange 2008 will be held April 20-23 at The Lodges at Deer Valley in Park City, Utah. Participation is limited.

To find out how **PIX** might benefit you, please call Layne Skoyen, Event Director, at [952] 736-9373 or lskoyen@pix-change.com. Watch a short streaming video of processors sharing their experiences at **PIX** at www.pi-xchange.com.

Prepared Foods **Product Innovation Xchange**℠

"This is an event designed to eliminate the negatives of a convention atmosphere and individual company sales visits. The conference facilities and organization allows a complete focus with 10-12 suppliers and peers over a two day period. I would highly recommend to both suppliers and processors."

— Myron Cooper,
Vice President,
Technical Services
The Hain-Celestial Group

"The event exceeded my expectations. We found it very beneficial to meet with existing suppliers along with those we did not know. We were shown resources and product lines that we were unaware of prior to the meetings. Great use of my time."

— Michael Maney,
Vice President Quality Assurance / Research & Development
Dean Specialty Foods Group

Chef Elise Wiggins of Panzano Restaurant has made a gluten-free focaccia using white rice flour, potato flour and tapioca flour.

believe that eating gluten is unhealthy. This subset of health-minded consumers crosses all demographic boundaries. Though sufferers of CD drive the core demand for gluten-free products, a second group of consumers is purchasing gluten-free foods. This second group falls under the category of "health and wellness seekers." This group may be far larger than those actually suffering from CD.

Creating Gluten-free Foods

Of course, creating and formulating successful gluten-free food products requires far more than simply understanding CD and the regulations regarding gluten-free labeling. The first Gluten-free Summit, to take place annually, recently was held in Copper Mountain, Colo. Many of the world's top experts in the area of gluten-free product development were there as presenters and speakers. Scientists, nutritionists, chefs and bakers came together to share knowledge and insights into this emerging area of nutrition.

Suzanne Bowland is the founder and president of GF Culinary Productions, as well as the creator and driving force behind the summit. She says, "Wheat, barley, rye and triticale (a hybrid of rye and wheat) are the cereal grains that must be avoided in new formulations and recipes. They contain the storage protein known as gluten, and it is the fragment of gluten known as gliadin that gives people who can't tolerate gluten trouble. Wheat has many varieties including spelt, kamut, farro, bulgur, dinkle, couscous and so forth. So, chefs have to be very familiar with the wheat family tree, so to speak. Also, unless oats are pure gluten-free oats, they are on the avoid list because most oats are not gluten-free, due to cross-contamination with wheat during harvesting and/or during the manufacturing process. The many grains (generally known as grains, but some are seeds or grasses) used to replace gluten-based grains include rice, amaranth, buckwheat, millet, quinoa, Job's tears, rage, tiff, corn, Indian rice grass (Montana), taro and sorghum. Many of the grains such as tiff, buckwheat, quinoa, amaranth and millet can be cooked quite similarly to how rice is cooked. Many chefs will recommend flavoring the broth that the grains are cooked in to help better impart flavor."

Gluten-free Resources

Bowland recommends several books on gluten-free grains, including *Whole Grains Everyday Every Way*, by Lorna Sass. "There has been an explosion of interest in gluten-free foods and recipes. Not only are we finding them in restaurants, but also in cookbooks and through classes like the lecture series and GF Summit," says Bowland. This increased interest is revealed in some gluten-free cookbooks. Author Carol Fester has written *Gluten-free Quick and Easy*, available this August by the Penguin Group, and *The Wheat-free Cook* by Jacqueline Mall Orca is already available from Harper Collins.

Showcase: continued

An all-natural gum blend that combines xanthan and guar gum to create **a synergistic combination can replace the gluten functionality in baked goods.** Gum Technology's Coyote Brand Stabilizer ST-101 mimics the function of gluten mixed with water, which produces an elastic and porous web capable of trapping the gas bubbles produced by leavening agents, thus allowing the product to rise. Call 800-368-GUMS for a sample and gluten-free brownie recipe. Gum Technology Corporation, 800-369-4867, info@gumtech.com, www.gumtech.com

Two soluble, all-natural fibers offer ground-breaking nutritional and functional properties. ORAFTI's Beneo™ (inulin, oligofructose) and Beneo Synergy 1 have healthy benefits that include improved calcium absorption, "invisible" fiber enrichment, **improved mouthfeel and enhanced gastrointestinal health through prebiotics.** Beneo replaces fat and sugar in foods, beverages and nutraceuticals without affecting taste, and Synergy 1 promotes bone mineral density at lower use levels. ORAFTI, Joseph O'Neill, 610-889-9828, joneill@orafti-us.com, www.orafti.com

Moisture retention, water control, air cell entrapment, suspension and viscosity can all be problems of functionality in gluten-free foods. VersaGum™ xanthan gum from Cargill Texturizing Solutions delivers those functionalities that can be inherently missing or compromised. It has a high heat tolerance and **maintains viscosity to hold an end product's structure during the baking process**. Other products to improve gluten-free foods include locust bean and guar gums; carrageenan and agar; corn and tapioca starches; and dietary fibers like inulin and whole-grain, gluten-free flours. Cargill Texturizing Solutions, Lori Fligge, 952-742-2275, lori_fligge@cargill.com, www.cargilltexturizing.com

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Chef Richard Coppedge, CMB, professor of baking at The Culinary Institute of America, has written a gluten-free baking book to be published early next year. Chef Coppedge has done a great deal of research into gluten-free baked item development. His students are required to convert a gluten-based bakery product into a gluten-free version. They need to be prepared and versatile, he says, because of the dramatic increase in restaurant customers with CD or gluten/wheat intolerance or allergies. Chef Coppedge says, "Less than a decade ago, when I first began working with gluten-free items, the reported number of people with gluten allergy was only one in 250 million. Today, the number of people claiming to be gluten sensitive may be one in 133. That is a pretty amazing increase." As to creating gluten-free formulas, chef Coppedge advises, "I use a variety of flours, ranging from white/brown rice to bean flours and even whey powder."

Chefs' Preferences

The growing percentage of people purchasing gluten-free products has spilled over to restaurants, where it is not unusual for some chefs to receive several requests for gluten-free menu items every day. Regarding retail, Bowman commented that there are likely many more people who are undiagnosed CD sufferers or who are gluten-intolerant, so they purchase gluten-free products. No doubt, sales figures in these categories continue to grow each year, as chefs and companies develop more gluten-free recipes.

Retail products aside, many notable chefs have created some incredible gluten-free foods. Chef Elise Wiggins of Panzano Restaurant in Denver created a signature tortellini recipe that uses amaranth flour and tapioca flour for the pasta. Wiggins declares she enjoys working with amaranth flour more than semolina. Chef Wiggins also has made a gluten-free focaccia using white rice flour, potato flour and tapioca flour, which she now serves at her restaurant, and she uses the leftovers to make a savory bread pudding.

Chef Curtis Lincoln of The Brown Palace Hotel created a *tabbouleh* recipe where he used quinoa instead of traditionally used bulgur wheat. He toasts the quinoa before mixing all of the other ingredients for a marvelous flavor. During a recent presentation, he mentioned that he likes the quinoa version more than the traditional bulgur wheat version.

Another food professional, chef-instructor Eric Stein of Johnson & Wales College, adores teff, the smallest grain in the world. He uses teff to make a porridge dish that sings with a variety of fragrant spices.

Given the increasing number of people who suffer from CD and the equally large number of consumers who insist that eating gluten-free foods makes them feel healthier, it is no wonder so many chefs are getting in on the act. Understanding the realities of dining from a customer's point of view has always been the restaurant chef's edge in new recipe development. pf

Website Resources:

www.PreparedFoods.com — Type "gluten-free" into the search field

www.theglutenfreelifestyle.com — Bowland's GF Culinary Productions

www.celiacdiseasecenter.columbia.edu — This Columbia University website offers much information on celiac disease

http://digestive.niddk.nih.gov/ddiseases/pubs/celiac/index.htm — Explanation of celiac disease

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PREPARED FOODS NEW PRODUCTS CONFERENCE

October 14-17, 2007 • Naples Grande Resort, Naples, Florida Mintel

Prepared Foods' 25th annual **New Products Conference** is the food & beverage industry's premier event for gaining valuable insights into exciting global new products, culinary advances and emerging consumer trends.

The **New Products Conference** provides R&D, Marketing and Corporate Management executives like you, a dynamic forum to learn from 18 world-class speakers, capture valuable new product & trend data, participate in an interactive culinary session, taste new products from around the globe, experience a live consumer focus group, capitalize on incredible networking and rejuvenate your creativity.

Sunday, October 14, 2007

12:00 - 4:00 p.m. **Everglades Adventure**
Travel the woven waterways of 10,000 islands while solitude envelopes you. You may see the snout of a manatee or the grace of dolphins swimming, birds, plants, and marine life.
Sponsored by Innophos

12:30 p.m. **Golf Tournament**
The Naples Grande golf course has challenges to put you to the test, yet it remains forgiving enough to remind you that golf is, after all, supposed to be fun.
Sponsored by Chr. Hansen

1:00-5:00 p.m. **Pre-Conference Workshops**
The Product Development Management Association's pre-conference sessions offer attendees a highly customized, intimate, learning opportunity.

pdma product development and management association

1) The Case for Building Your Innovation Budget
Lip service to innovation ends where the budget begins. Successful innovation management depends on the steady long term funding that builds a continuous flow of new ideas for your market. Funding must be matched by an informed leadership team that is both aggressive around expectations and understanding of failure. This workshop will take a hard look at strategies that succeed and strategies that doom a company to low margin slow follower status. We will look at ways to help participants build their case for their innovation budget.
Christopher W. Miller, Ph.D., NPDP, PDMA

2) Developing New Product Concepts
Responsible for developing new product concepts to fill your innovation pipeline and not sure how to get started? This workshop is a step-by-step guide for building new product concepts from task identification and idea generation through initial screening.
Andre Csapo, Director Discovery & Innovation, PDMA

3) The Creative U
Knowledge of your own creative style and creative preference is important for top performance at work or in your life. Learning tools and techniques to enhance creativity and bring creative energy into the service of your customer is the topic of this fun and exciting exploratory workshop.
Bree Gillespie, Director, Discovery & Innovation, PDMA

7:00-9:00 p.m. **Welcome Reception**
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Monday, October 15, 2007

7:30-8:30 a.m. **Breakfast Buffet**
Sponsored by Tree Top

8:30-8:45 a.m. **Opening Remarks**
Peter Havens, Group Publisher and Claudia O'Donnell, Editor-in-Chief, *Prepared Foods*

8:45-9:30 a.m. **Keynote: Convenience as Defined by the Generations: Boomer, Gen Xer and Millennial**
Speaker: Larry Wu Jr., Vice President, Consumer Strategist, Food and Beverage, Iconoculture
"Convenience" conjures up images of a speedy kitchen for consumers, but mealtime stress plays out differently for each generational consumer segment. Time is not always the primary driver, and the definition of kitchen convenience varies by age. How does this "Ready, Set, Go!" behavior differ by each generation? What is the impact on food choices, and how can these differences be applied to product development, packaging and marketing strategies? Wu's experience as R&D director with Starbucks, as well as with CH Guenther & Son, General Foods Corporation and Campbell Soup, gives him real-world experience for realistic advice.

9:30-10:00 a.m. **Understanding La Comida Latina**
NEW
Speaker: Ricardo Lopez, President, Hispanic Research Inc.
Hispanic culture revolves around food. Neighborhood selections are even based on the availability of Latino foods. This unyielding attitude affects everyone in the food industry and is changing the way America eats. However, understanding Latino food is not easy. Latinos come from some 20 different countries, each with a unique food heritage. In addition, Hispanics demand new prepared foods to go with their new American lifestyle. This presentation examines Hispanic food attitudes and addresses Latino food needs.
Sponsored by Virginia Dare

10:00-10:30 a.m. **Refreshment Break**
Sponsored by Flax Canada 2015

10:30-11:00 a.m. **Fads and Fundamental Changes, Tracking the American Consumer**
Speaker: Joe Derochowski, Director, NPD Group
Dining out or dining in. Snacking or sit-down meals? What do Americans think and do? Utilizing research from 30 proprietary databases and 31 years of trend tracking, a revealing look explores what, where, when and how Americans eat. Year-to-year changes in eating habits can be small but surprising, while significant changes emerge over time.

11:00-12:00 noon **Exploring Tumultuous Teens**
Live Focus Group
Facilitators: Bryan Urbick, CEO & Chairman, and Abel Westerhof, COO & Director – Consumer Knowledge Centre Ltd
Targeting the critical teen market is a challenge for food manufacturers. Many companies are resigned to lose consumers during these years in the hope that teens will again be brand loyal during adulthood. Mintel has called teens the "ignored demographic." Learn from a live teen panel discussing food and beverages in the context of their lives, what is important to them and what is not. Hear their views on shopping for food, eating in versus out, choosing brands and products, product winners and losers, and, most importantly, their reasons why. Audience participation is encouraged in an extended Q&A session.
Sponsored by IFF

12:00-1:30 p.m. **Luncheon**
Sponsored by California Raisin Board

1:45-2:30 p.m. **Obesity: A Defining Issue in Health and Wellness**
Speaker: Barb Stuckey, Executive VP of Marketing, Mattson
New products ideally address all consumer desires, from indulgence to healthy eating. With the current "obesity crisis," how can this be accomplished ethically, yet profitably? What marketing and product development tactics assist food manufacturers in finding overlooked opportunities? Primary research is unveiled providing insights on new concepts offering consumers hope, encouragement and help in weight and overall health management.

"Fascinating, I liked seeing and hearing a live panel"

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To register, contact Jenny Bogdajewicz at 630-694-4353, Bogdajewiczj@bnpmedia.com or www.PreparedFoods.com/npc

OCTOBER 14-17, 2007 Naples Grand Resort, Naples, Florida

2:30-3:00 p.m. **Refreshment Break**
Sponsored by Flax Canada 2015

3:00-3:40 p.m. **Delving into Demographics**
Speakers: Lynn Dornblaser and David Jago, Directors, GNPD Consulting Services
Consumers want what they want, but what do food manufacturers think they want? This fast-paced presentation discusses new products around the globe that are being positioned for specific demographics. What intriguing new products are for children, for women, for consumers concerned about heart health or digestive health, for those looking for familiar indulgence or searching for novel, creative new foods and beverages? Insights and information will light the creative spark in R&D and marketers alike.

3:40-5:00 p.m. **Global Product Sampling: Delivering to Consumer Niches**
Presented by: The consulting staff of the Mintel Global New Products Database (GNPD)
Sometimes listening is not enough. Tasting, touching and seeing firsthand some 70 new products launched around the world provides invaluable, impossible-to-get information. Products will be grouped by key consumer niches.

6:00-7:00 p.m. **Cocktail Reception**
Sponsored by Hormel Foods Corp.

7:00-7:30 p.m. **The Spirit of Innovation Awards Ceremony**
Join us in celebrating the industry-nominated, innovative product development teams that recently introduced a new product in foodservice and retail markets. Discover how these product development teams operate.
Sponsored by Ventura Foods

7:30-9:00 p.m. **Spirit of Innovation Dinner**
Join us for a casual buffet featuring Floridian cuisine. Relax and enjoy great food and conversation. Share your thoughts on today's sessions. Immediately following the Awards Ceremony.
Sponsored by Ventura Foods

"Excellent speakers, very interesting presentations"

"Better understanding of worldwide trends in foods and flavors"

Tuesday, October 16, 2007

7:30-8:30 a.m. **Breakfast Buffet**
Sponsored by Ocean Nutrition Canada

8:30-9:15 a.m. **Positioning "Healthy" Products for Success**
Speaker: Valerie Skala Walker, Vice President, Consumer & Shopper Insights, Information Resources, Inc.
As more prepared food products incorporate health-related benefits, it is increasingly important to understand the factors that help or hinder their success. What are some of the most successful new brands with health-related positions in the marketplace, and what are the factors contributing to that success? From the words used to describe a product's features and benefits to the dollars spent on advertising, what makes one brand outsell its rivals?

9:15-10:00 a.m. **Exploring Tumultuous Teens: Insights and Take Aways**
Speaker: Bryan Urbick, CEO & Chairman, Consumer Knowledge Centre Ltd
As a follow-up to Monday's thought-provoking panel of teens, additional insight and analysis will provide the audience a better understanding of this important and mystifying consumer segment.
Sponsored by IFF

10:00-10:30 a.m. **Refreshment Break**
Sponsored by Qualisoy

10:30-11:00 a.m. **Food and Flavor Trends Through Foodservice Operators' Eyes**
NEW
Speaker: Kevin Higar, Director Operator Product Development, Technomic
The foodservice industry is both a vital customer segment of packaged foods companies and also a source of inspiration for new product ideas. What are current and emerging food developments in this arena? What culinary trends, flavor profiles and emerging concepts are operators utilizing to satisfy loyal customers and attract new ones? What strategic consumer trends drive the menu items of today and tomorrow? Most importantly, how do prepared food suppliers help operators succeed in this dynamic environment?

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11:00-11:35 a.m. **If it Tastes Good, is it Bad?**
Speaker: Dr. Gary Beauchamp, Director, Monell Chemical Senses Center
Foods or beverages will not be consumed unless they taste good. Yet it sometimes seems as if most of what tastes good is actually bad for us--especially sugar, salt and fat. Also, what is good for us often is not so well liked, such as vegetables. These generalizations are particularly pertinent when considering children. This presentation discusses why we like and dislike what we do, how these preferences might be modified, and why recent discoveries in how our flavor sensory systems work may provide new approaches to healthy enhancement of food flavors.

11:35-12:00 noon **Collegiate Education Awards**

12:00-1:00 p.m. **Luncheon**
From Culinary Inspiration to New Product Innovation
A multi-sensory exploration of the leading-edge culinary trends today that are shaping the way we experience food tomorrow.
Sponsored by Givaudan

1:15-3:45 p.m. **Innovation Panel**
Innovation has been defined as the successful implementation of creative ideas within an organization. Through innovation, companies lift their products above commodity status to provide more profitable foods and beverages desired by consumers. What does it mean to be innovative? What are pitfalls to avoid? Which tools and opportunities can be leveraged? This accomplished panel will offer perceptive suggestions.

1:15-1:45 p.m. **Panelist 1: Lynn Gordon, President, French Meadow Bakery & Cafe**
French Meadow Bakery has nationally introduced cutting-edge, healthful and even controversial products such as Men's Bread, Healthy Hemp Bagels and Fat Flush Sprouted Tortillas. Founded in 1985, French Meadow is the longest continuously certified organic bakery in the country and has been twice named by *Bon Appetit* magazine as one of the Ten Best bread bakeries in the U.S. With an unorthodox approach, business success has followed, with Gordon being named Minnesota's Small Business Person of the Year in 2005 by the Minnesota district office of the U.S. Small Business Administration.

1:45-2:15 p.m. **Panelist 2: Jeff Bellairs, Director of the Worldwide Innovation Network, General Mills**
General Mills is building relationships with external partners that are enhancing, complementing, and accelerating innovation already taking place internally. Coined "Open Innovation", this initiative is helping the company evolve and expand its innovation efforts. General Mills has found that by leveraging new products and technologies created outside the company, it is better prepared to meet the changing demands of the marketplace.

2:15-2:45 p.m. **Refreshment Break**
Sponsored by Wild Flavors

2:45-3:15 p.m. **Panelist 3: Phil Roos, President & CEO, Arbor Strategy Group**
What are the key drivers of winning innovation, and how can organizations leverage them to drive sustainable growth? Creativity, consumer insights and rigorous business analysis all play a central role, but a deeper understanding of innovation itself is also critical. The Arbor Strategy Group's work has uncovered a simple yet powerful truth: innovation is evolutionary and tends to follow a fairly predictable pattern. Understanding these patterns and the "innovation evolution model" can help organizations identify high-potential, future opportunity space and translate it into innovation that is differentiating and creates real value.

3:15-3:45 p.m. **Innovation Panel Q&A Session**

6:00-7:30 p.m. **Networking Reception**
Relax, unwind and enjoy mouth watering appetizers and thirst-quenching libations.
Sponsored by National Starch Food Innovation

7:30 p.m. **Dinner on your own.**

Wednesday, October 17, 2007

7:30-8:30 a.m. **Breakfast Buffet**
Sponsored by Mane, Inc.

8:30-10:00 a.m. **Differentiating Products with Innovative Flavor Combinations**
Interactive Tasting Session
Speakers and Facilitators: Dr. Victor A.L. Gielisse, CMC, Associate Vice President, and Ronald De Santis, Director, Continuing Education's Industry Solution Group, The Culinary Institute of America
Consumers demand variety, stimulation, authenticity and satisfaction from foods and beverages. This interactive session will demonstrate the use of ordinary ingredients to bring extraordinary results by creating flavors that entice consumers. Two great culinary educators exhibit their skills and enlighten New Product Conference attendees by providing irreplaceable knowledge through the experience of tasteful samples.

10:00-10:30 a.m. **Closing: Thank you from New Products Conference Organizers**
Grand prize drawing and more!
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Stretch Your Cocoa

Kerry Hughes, R&D Applications Editor

Chocolate is no longer forbidden. In fact, for many people it is now considered a health food! Not surprisingly, consumption is growing fast. Add to this fact that cocoa production is anticipated to drop this year, creating another market shortage, and no doubt prices will rise. This will put a squeeze on many companies' ingredient costs and send some to find alternatives to adding cocoa powder in the formulation of new products.

David Michael & Co. has built its reputation as a company that is quick to respond to market situations, providing its clients tangible solutions to industry challenges. When faced with a cocoa shortage in 2002, David Michael launched Cocoa-Mate®, a line of customized cocoa extenders that take into consideration both the type of cocoa and total percentage of cocoa used in a finished product. The extenders are especially helpful in times of shortage, as they replace up to 30% of the cocoa powder used in a finished food product.

According to Marie Cummings, manager of food applications and product development for David Michael & Co., "We have conducted application trials with Cocoa-Mate and found—at the recommended usage rates—that cookies, brownies or other signature chocolate items made with Cocoa-Mate taste just like those made with pure cocoa powder."

The extender may be customized for various types of applications, including ice cream, yogurt, beverages, puddings, toppings and baked goods such as cookies and brownies. Cocoa-Mate is available as either a natural and artificial or an artificial flavor, in either liquid or powder form; it essentially can be used in any application that calls for cocoa powder. pf

Chocolate consumption is increasing and, for many people, it is no longer a forbidden food. The Food and Agriculture Organization of the United Nations has projected consumption rates to try to predict shortage or overage problems.

For more information:
David Michael & Co., Philadelphia
Erin Kate O'Donnell • 215-632-3100
www.dmflavors.com

Cocoa: Actual and Projected Consumption (to the Year 2010)

Region	Actual 1988-1990 Average	1998-2000 Average 000 tons	Projected 2010	Growth 1988-90 to 1998-2000 % per year	Rates 1998-2000 to 2010
World	2,164	2,833	3,554	2.7	2.1
Developing	787	1,053	1,284	3.0	1.8
Africa	180	366	450	7.4	1.9
Latin America	400	338	356	-1.7	0.5
Far East	202	322	434	4.8	2.8
Developed	1,377	1,780	2,270	2.6	2.2
North America	285	476	703	5.3	3.6
Europe	916	1,186	1,433	2.6	1.7
EC	816	1,095	1,348	3.0	1.9
Other Europe	100	91	85	-0.9	-0.6
Former USSR	130	65	71	-6.7	0.8

Source: www.fao.org/docrep/006/y5143e/y5143e0x.htm#TopOfPage (visit site to see complete list)

Delivering Dairy Flavors

Richard F. Stier, Contributing Editor

Flavors are a mixture of compounds, distillates, concentrates, extracts and essential oils that are combined to give a specific flavor profile to a food. Flavor houses usually dilute these chemical mixtures so that the flavor has a usage level of 1% to 2% in the finished product.

Meat, cheese and vegetable flavors are categorized as "savory" in that they are typically enhanced with salt. This is opposed to sweet flavors, such as fruit flavors or brown sweet flavors (e.g., caramel and chocolate), that are enhanced with sugar, explained Laura Hartnett, manager of technical solutions, Edlong Dairy Flavors, in a presentation entitled "Utilizing Dairy Flavors in Baked Applications," given at the *Prepared Foods*' 2006 R&D Applications Seminar.

Dairy flavors are those that have a flavor profile of milk or foods derived from milk such as cheese, cream or butter. They may also include flavors typically used in ice cream or yogurt.

There are several types of dairy flavors. For example, there are the actual food materials such as cheese, whey or cultured dairy products and their dried or dehydrated counterparts. There are also dairy flavors produced through the use of enzymes. Products such as enzyme-modified cheese or lipolyzed butter oil have more intense flavors. These flavors may be further intensified through the use of flavor compounds, extracts or distillates. Such flavors may also be compounded with commodity products like dry blends, liquids or emulsions, said Hartnett.

Challenges and Benefits

Some challenges in working with dairy flavors include price fluctuations, flavor impact, functionality, supply, variation, difficulty in customizing flavor profiles and dairy allergens. However, the many benefits include the provision of unique characteristics; the ability to add processing notes without having to process; stability in abusive systems; an ability to customize the flavor; batch-to-batch standardization; and an ability to meet customer needs.

Bakery products that may benefit from dairy flavors include butter cookies, cheese crackers, buttermilk biscuits and snack seasonings. They may be baked into the dough, applied topically, added in an oil or slurry, or used in a filling or an inclusion, according to Hartnett.

A Natural & Artificial (N&A) Butter Type Flavor provides an idea of the cost savings that can be achieved. "Sweet," "popcorn," "corn," "creamy," "diacetyl," "lactone," "melted" and "nutty" are terms typically used to describe the flavor. A cost savings of about $0.12/lb can be obtained in a poundcake made with this flavor, when compared to butter.

When selecting a dairy flavor, the developer needs to consider cost, flavor profile, heat stability, interactions with other ingredients, shelflife stability, labeling and allergen issues. As an example, when formulating a cheese cracker made with real cheese, the developer has a number of options. One could formulate with 50% less cheese plus an enzyme-modified cheese to enhance the flavor profile. A product with reduced cheese and a top-note cheese flavor or a topical seasoning with an intense cheese flavor could also be used.

When embarking on any new bakery project utilizing dairy flavors, it is a good idea to discuss goals and ways of meeting those goals with a flavor company expert in dairy applications. pf

For more information:
Edlong Dairy Flavors • Elk Grove Village, Ill.
Laura Hartnett • 847-631-6765 • LHartnett@edlong.com
www.edlong.com

Benefits of Using Flavors

- Provide unique characteristics such as branding.
- Add process notes without cost of processing.
- Stability in abusive systems.
- Easily customized.
- Significant cost reductions.
- Batch-to-batch standardization.
- Meet specific customer requirements such as having the product be kosher or having no trans fat.

Source: Edlong Dairy Flavors

Rosemary by Any Other Name

A reformulated line of ingredients promises to protect edible and frying oils from rancidity, while satisfying both producers and consumers. Vitiva has reformulated its INOLENS® 4 line for substantially reduced odor and bitterness, plus protection from changes in taste, odor and color while extending product shelflife. INOLENS 4 is an odorless rosemary extract line introduced last year and is the result of Vitiva's proprietary extraction process to eliminate strong odor typical to many rosemary extracts, making INOLENS 4 suitable for a wide range of food applications. Vitiva, Dushka Dimitrijevic, +386 2 1788 87 38, service@vitiva.si, www.vitiva.si

Promising Soy Research

New research from cancer experts at the National Cancer Institute suggests that eating soy foods as a child or teen—specifically, before a girl enters puberty—may be a way to prevent breast cancer. In this study, women who consumed higher amounts of soy between the ages of five and 11 were 58% less likely to develop breast cancer than women who consumed less soy in this period of their lives. With one in every eight women predicted to develop breast cancer at some point in their lives, this is promising news. The Soyfoods Council, Linda Funk, 866-431-9814, lfunk@thesoyfoodscouncil.com, www.thesoyfoods.com

For Sharper Cognition

One of the recipients of *NBJ*'s product merit award for 2007 improves cognitive performance and is a unique phosphatidylserine (PS) compound, having a DHA component conjugated to its backbone. Enzymotec has announced that Sharp•PS™ GOLD is the recipient of the award and also announced the formal launch of its website, www.Sharp-PS.com. The PS form in Sharp•PS GOLD has a greater resemblance to the natural form of PS found in the human brain and in breast milk and is known to increase the availability of DHA to the brain and have greater impact on cognitive performance. Enzymotec Ltd., Orly Farkash, +973 4 654 5112, orly@enzymotec.com

Yo-Yo Dieting Increases Cancer Risk

Women who yo-yo diet, experiencing significant fluctuations in weight, may more than double their risk of kidney cancer, according to research published in the *American Journal of Epidemiology*. In the study, researchers studied 140,057 women between the ages of 50 and 79 for close to eight years and concluded that considerable weight swings and a large waistline were more accurate risk factors in the development of kidney cancer than was obesity.

Women whose weight fluctuated by more than 9.9lbs (4.5kg) more than 10 times during their adulthood were two and a half times more likely to get kidney cancer.

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An Ice Cream Dream

Today's ice cream processors can offer consumers the ability to have great-tasting ice cream at a stable cost, despite rising concerns about milk prices. Danisco's GRINDSTED® IcePro stabilizer systems actually reduce the over-

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An industry leader in fully cooked ethnic and specialty meats for foodservice, industrial and retail markets is funding a food science and technology graduate program scholarship at The Iowa Section of the Institute of Food Technologists at Iowa State University. Burke Corporation furthers its commitment to education and continuous improvement in food science and technology by sponsoring this fund. www.BurkeCorp.com

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all cost of ice cream, because manufacturers can reduce butterfat and dairy solids content. The added health and wellness benefit of less fat does not affect taste, making it a win-win situation for the taste buds and the waistline. Danisco USA Inc., Jennifer Lindsey, 800-255-6837, ext. 1271, jennifer.lindsey@danisco.com, www.danisco.com

Reasons to Include Raisins

As one of the oldest dried fruits and one of the first "processed" foods, raisins have many uses—including a role in Mediterranean cuisine. Raisins are a staple of the Mediterranean diet, and this region has been the focus of interest because of the low rates of chronic diseases and high life expectancy. California raisins occupy the second tier of the Mediterranean diet pyramid in the fruits and vegetables category and are an important part of the foundation of the diet, as reflected in traditional dishes of the region. California Raisin Marketing Board, 559-248-0287, raisins@tjpmd.com, www.calraisins.org

Zero in on Sweetness

A leading manufacturer of erythritol has branded its product line under a new name and introduced a new consumer education website. Cargill's Zerose™ erythritol (formerly known as Eridex™ erythritol) clearly conveys to food manufacturers and consumers that the all-natural sweetener contains zero sugar, calories, aftertaste and artificial ingredients. The new website, at www.zerosesweetener.com, is designed to answer questions about erythritol and explain its benefits as a natural sugar alternative. Cargill, Lori Fligge, 952-742-2275, lori_fligge@cargill.com, www.cargill.com

Excellent Emulsifier

A leading stabilizer manufacturer announced self-affirmed GRAS status for its line of modified gum emulsifiers. Based on an evaluation from an independent expert panel of scientists, TIC Gums' TICAmulsion® line of modified acacia gums earned the GRAS status, which is advantageous for manufacturers, because it creates new opportunities to apply its superior emulsification capabilities in a wide range of foods. It also offers improved functionality because it effectively emulsifies the most difficult systems, such as those that contain oil levels of more than 10%. TIC Gums, 800-899-3953, svandenheuvel@ticgums.com

Gluten-free Goodness

With an estimated one in 133 Americans suffering from gluten intolerance, demand is growing for food products to expand their limited choices. Zumbro River Brand (ZRB) makes extruded crisps, cereals and snack pieces containing soy, whey, amaranth, corn, buckwheat, millet, bean and other gluten-free ingredients. As a contract manufacturer of gluten-free products, ZRB can assist in product development, production and packaging as well as maintaining an FDA-registered, kosher facility that is audited by the American Institute of Baking and the Gluten Intolerance Group. Zumbro River Brand Inc., Ginny Busch, 507-446-9097, www.zumbroriverbrand.com

Shelf-stable Omega-3 Oil

An omega-3 oil for shelf-stable, heat-treated applications is now available from a rapidly growing global flavor and fine ingredients company. Frutarom USA offers Alina™, a patented plant source of omega-3 fatty acids from salvia seed that is derived through a natural extraction process. Alina offers greater stability in baked goods, bread, dairy, cereal and a wide range of beverage products such as health drinks. Frutarom USA Inc., Jennifer Czerner, 757-224-8394, jczerner@us.frutarom.com, www.frutarom.com

Dishing out Low Density

According to a year-long clinical trial by Penn State researchers, eating smart, not eating less, may be the key to losing weight. Research shows that diets focusing on foods that are low in calorie density can promote healthy weight loss while helping to control hunger. Foods high in water and low in fat—such as fruits and vegetables, lean meats and low-fat dairy products—are low in calorie density and provide fewer calories per bite. The study has shown that choosing such foods over the long term will help more with weight loss than simply eating fewer calories. Penn State Public Information, Amitabh Avasthi, 814-865-9481, axa47@psu.edu

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Sunflower Power

A new light, well-rounded sunflower-based flavor enhancer is effective as a flavor base for poultry, pork, seafood and vegetable products. Part of Savoury Systems International's expanded line of hydrolyzed vegetable proteins (HVP), this non-GMO product has a lower allergen response and is different from soy or wheat because of its varied protein complex. When the proteins are broken down to amino acids, a unique flavor profile is presented. Savoury Systems has also developed a complete line of HVPs, including spray-dry and oven-dry. Savoury Systems International, Ken Eisenberg, 908-217-6797, kene@savourysystems.com, www.savorysystems.com

Prebiotics and Neonatal Formula

A world leader in natural prebiotic ingredients has launched a long-term study to look at the effects of prebiotic-supplemented infant formula on the development of the neonatal immune system and the incidence of allergy in infants. ORAFTI Active Food Ingredients' Beneo™ Synergy1 is the supplement involved in the study, which is part of the EARNEST project—an E.U.-funded initiative aiming to assess the importance of early nutrition on the modulation of adult disease risk. A growing body of evidence already supports the notion that early nutrition can play an important role in the prevention of disease later in life. ORAFTI Active Food Ingredients, Joseph O'Neill, 610-889-9828, www.orafti.com

Vitamin D May Reduce Cancer Risk

Medical research reports that vitamin D may reduce the risk of several kinds of cancer. The study showed that women who took high doses of vitamin D had 60% fewer cases of blood, breast, colon and lung cancer than others. Experts caution the study, published in the *American Journal of Clinical Nutrition*, was small and focused on older women, so more research is needed.

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Educational Opportunity

Members of the Research Chefs Association (RCA) can now earn one credit hour by completing a new e-learning module. The Almond Board of California has created the module specifically for RCA members. It includes valuable insights about consumers' dining habits and their perceptions about health and wellness, as well as tips on developing nutritious and indulgent menu items. Members can find a wealth of information specific to almonds, including their value in terms of health, taste and versatility. Visit the learning module at www.almondsarein.com/emodules/almightyalmonds.

Dry Dairy

A new line of spray-dried dairy flavors is being launched by a leading global food supplier. Chr. Hansen has announced the new line, which features some top sellers in the enzyme-modified dairy ingredient area, meaning well-proven flavor profiles will now be available in spray-dried form. The flavor portfolio includes sharp and aged cheddar and American cheeses, sweet cream, Parmesan and butter. One of the key features of spray-dried dairy flavors is the dairy-based carrier system that ensures all-natural, clean-label flavor while providing a more authentic dairy flavor profile. Chr. Hansen, Karen Frost, +45 41 18 52 35, karen.frost@dk.chr-hansen.com, www.chr-hansen.com

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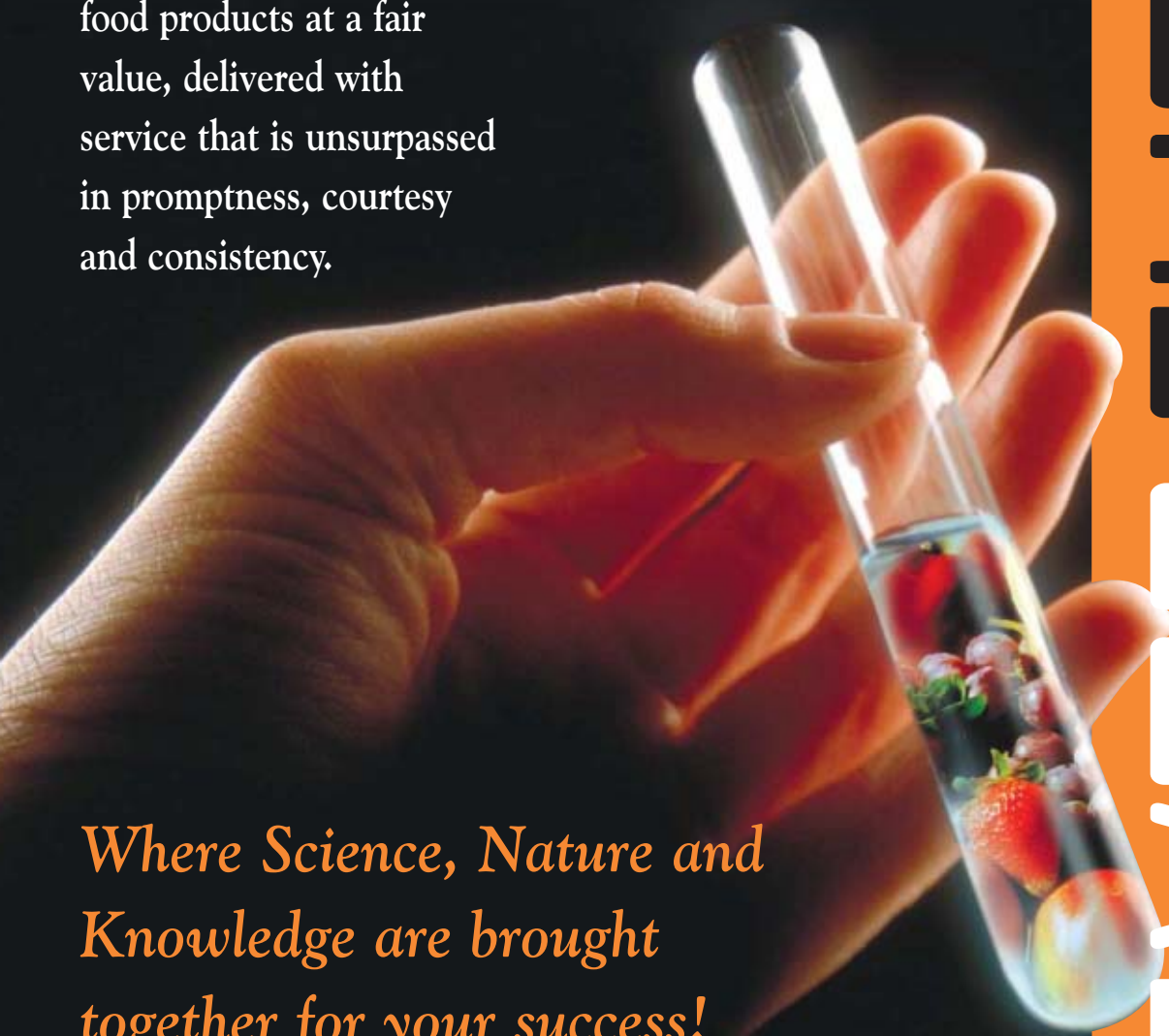

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The nutritional benefits of wild blueberry, cranberry, raspberry, strawberry, prune, tart cherry, wild bilberry and grape have all combined in a new fruit blend. FutureCeuticals' VitaBerry® is a proprietary combination of freeze-dried whole fruit powders and extracts and provides 100% fruit antioxidants and high levels of fruit polyphenols, anthocyanins, proanthocyanidins, ellagic acid, chlorogenic acid and quinic acid. VitaBerry offers consumers a way to supplement their diets with an all-natural, all-fruit product that can help combat oxidative stress and resultant damage caused by free radicals. FutureCeuticals, a division of Van Drunen Farms, Alan McGuirt, 815-472-3100, amcguirt@vandrunen.com, www.futureceuticals.com

OdorlessFish Oil

Now there is an omega-3 fish oil that is pure, tasteless and odorless. Hormel Health Technology LLC and the Specialty Products Division of Hormel Foods announce the Eterna brand of omega-3 oil that has virtually no fish odors or flavors, which are removed through a proprietary process. The new brand of fish oil is also expected to provide the best possible oxidative stability and offers effective solutions to food manufacturers needing to overcome end-user concerns related to fishy-smelling odors, poor shelflife and off-flavors. Hormel Specialty Products, Mike Buttshaw, 800-956-0399, www.hormel-ingredients.com, www.hormel.com

Calcium Better in Diet

Which source is better: calcium-rich foods or supplements? A preliminary study by researchers at Washington University School of Medicine suggests dietary calcium might be better at protecting bone health, reports The Associated Press.

Though not definitive, the study found that women who get most of their daily calcium from food have healthier bones and higher bone density

You Can't Drink Away Hunger

Researchers Richard Mattes and Wayne Campbell, professors of food and nutrition at Purdue University, found that people who drink beverages do not register being as full as those who actually eat their calories.

In a three-day trial, 120 subjects ate a special test lunch and then could choose what they wanted for dinner. They carefully recorded their intake and feelings of hunger at certain intervals. During the second and third days, the participants were given a liquid or a solid food sample to accompany their lunch. The samples varied between being high-protein, high-carbohydrate or high-fat. After consuming them, the subjects were allowed to eat as many sandwiches as they liked and also eat dinner until they felt full.

The results, published in *International Journal of Obesity*, showed that when compared with a sandwich and water control, those who ate solid test food at lunch ate less later in the day. However, those who drank test foods during the midday meal ate more afterwards, and consumed between 12% to 20% more calories daily than when eating solids.

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Monday, Sept. 17, 2007: Applications Challenges

A complete list of presentations as of 7/16/07. Subject to change.

TRACK: FLAVORS & COLORS

8:30-9:10 a.m. **Natural Solution to Coloring Foods**
Speaker: Zohar Nir, VP NPD & Scientific Affairs, LycoRed Ltd. Beer-Sheva Israel

9:15-9:55 a.m. **Taste Matters when Creating Healthy Foods: Understanding How Taste Modifiers Work**
Speaker: Mariano Gascon, Flavor Lab Director, Wixon Inc.

TRACK: MEATS & MARINADES

1:00-1:40 p.m. **Choosing the Right Enzyme for Your Marinade/Tenderizing System**
Speaker: Peter Moodie, Director Sales & Marketing, Enzyme Development Corporation

1:45-2:25 p.m. **Use of Antimicrobials and Antioxidants in Food Products**
Speaker: David Grex, IsoStat Division, Technical Sales Manager, Newly Weds Foods Inc.

2:30-3:10 p.m. **Formulating Winning Sauces with Thermal Gelling Hydrocolloids**
Speaker: Mary Jean Cash, Senior Staff Scientist, Aqualon Division of Hercules Inc.

3:15-3:55 p.m. **Hydration of Water Soluble Polymers**
Speaker: Ross Clark, Distinguished Research Fellow, CP Kelco

TRACK: BAKED GOODS

8:30-9:10 a.m. **Chemical Leaveners in Bakery Applications**
Speaker: EB Russell, Technical Manager, Budenheim

9:15-9:55 a.m. **Flavoring Bakery Products**
Speaker: Agneta Weisz, Vice President Research & Development, Comax Flavors

10:30-11:10 a.m. **Naturally Stabilized Omega 3 Flax System**
Speaker: Mary Ekman, General Manager – USA, Pizzey's Milling USA

11:15-11:55 a.m. **Hitting a New Market: Delicious Vegan Baked Goods**
Speaker: Christine L. Garcia, Lead Counsel, The Animal Law Office

1:00-1:40 p.m. **Extending and/or Replacing Fruit with Flavored Particulates**
Peter Holocher, Product Development Manager, SensoryEffects (A PCI Food Ingredients Business)

1:45-2:25 p.m. **Enter the World of Sourdoughs**
Speaker: Christophe Dewilde, Business Development - Bakery Flavors, Puratos Corporation

2:30-3:10 p.m. **Use of Palm Oil in Baking and Food Service**
Speaker: Harold Kazier, Applications and Technical Services Manager, Loders Croklaan

3:15-3:55 p.m. **Innovative Methods for Lowering Saturates in Trans Free Shortenings**
Speaker: Ventura Foods

TRACK: STARCHES, GUMS & FIBER

8:30-9:10 a.m. **Functional Fibers for Grain Products**
Speaker: Jit Ang, EVP, Research & Development, International Fiber Corp.

9:15-9:55 a.m. **Nutritional and Functional Benefits of Soy Fiber in Various Food Systems**
Speaker: Melanie T. Dineen, Applications Technologist, SunOpta Ingredients Group

10:30-11:10 a.m. **Gum 101**
Speaker: Allen Freed, President/CEO, Gum Technology Corp.

11:15-11:55 p.m. **Modified Gum Acacia: A Potential Replacer for Gum Arabic and Modified Food Starch**
Speaker: Nabil Naouli, Principal Scientist, TIC Gums Inc.

TRACK: SPORTS & ENERGY DRINKS

1:00-1:40 p.m. **Fortifying Beverage Profits via Whey Protein Fortification**
Speaker: Starla Paulsen, Applications Department Manager, Glanbia Nutritionals

1:45-2:25 p.m. **Keep Going: Formulating Foods & Beverages for Sustained Energy**
Speaker: Marion Dalacker, Director, Market Strategies, WILD Flavors Inc.

2:30-3:10 p.m. **Nutritious and Delicious: Mineral Enhanced Beverages**
Speaker: Gale Walters, Account Manager, Food and Nutrition, PURAC America Inc.

3:15-3:55 p.m. **Creating Healthy Lifestyle Beverages**
Speaker: Tracy M. Mosteller, Team Manager - Frozen Desserts & Beverages, Danisco

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Monday, Sept. 17, 2007: Applications Challenges

A complete list of presentations as of 7/16/07. Subject to change.

TRACK : ORGANIC, ALLERGEN-FREE & LABELING

8:30-9:10 a.m. **Food Labelling Challenges: A Global Perpsective**
Speaker: Jean Theiss, Director, Regulatory and Technical Information Systems, Newly Weds Foods Inc.

9:15-9:55 a.m. **The Latest on Vegan Marketing, Labeling and Liability**
Speaker: Christine L. Garcia, Lead Counsel, The Animal Law Office

10:30-11:10 a.m. **Better Gluten-Free Products Using Specialty Starch**
Speaker: Eric Shinsato, Technical Sales Support Manager, Corn Products International Inc.

11:15-11:55 a.m. **Organic Revolution: What It Really Means**
Speaker: Greg Bach, Director of Product Development, Synergy Flavors Inc.

TRACK: NEW EMERGING INGREDIENTS

1:00-1:40 p.m. **New Nutritional Ingredients for "Healthy Heart" and "Healthy Bones"**
Speaker: Rodger Jonas, National Business Development Manager, P.L. Thomas

1:45-2:25 p.m. **Hydrocolloid Synergies and their Practical Applications in Foods**
Speaker: Ingredient Solutions

2:30-3:10 p.m. **Exotic Tropical Fruits: New Applications**
Speaker: Tony Cantu, Senior R&D Technologist, iTi Tropicals Inc.

3:15-3:55 p.m. **Great Taste & Wellness**
Speaker: Puratos Corporation

TRACK: INGREDIENT SYSTEMS FOR WEIGHT MANAGEMENT PRODUCTS

8:30-9:10 a.m. **Innovative Solutions for Formulating Weight and Glycemic Management Products**
Speaker: Cristina Munteanu, Food Applications Specialist, GTC Nutrition

9:15-9:55 a.m. **New Research and Recipes for Reducing Starch Absorption**
Speaker: Kanak Udani, Consultant, and Gerard Viverito, Culinary Instructor, Pharmachem Laboratories Inc.

10:30-11:10 a.m. **Application of Insoluble, Refined Fibers in Weight Management Products**
Speaker: Jon Bodner, Senior Manager – Applications, J. Rettenmaier

11:15-11:55 a.m. **EGCG: Ancient Wisdom for Modern Health**
Speaker: Lynda M. Doyle, Director, New Business Development, DSM Nutritional Products, Inc.

TRACK: HEALTHFUL FORMULATIONS

1:00-1:40 p.m. **Correlating Nutrition and Health with Your Beverage Brand**
Speaker: Jessica Jones-Dille, Industry Trend Manager, WILD Flavors Inc.

1:45-2:25 p.m. **Formulating Functional Foods with Long Chain Omega-3s**
Speaker: Valerie Sanders, Food Applications Scientist, OmegaPure

2:30-3:10 p.m. **Functional and Nutritional: Egg Products Fit the Future of Formulation**
Speaker: Shelly McKee, Professor of Poultry Science, Auburn University and Marcia Greenblum, M.S., R.D., Director of Educational Outreach, Egg Nutrition Center, Washington, DC

3:15-3:55 p.m. **"Sugar-Free," "Reduced Sugar," and "No Sugar Added:" Expanding Beyond Confections**
Speaker: Rick Francolino, Food Scientist, Corn Product Specialty Ingredients

TRACK: APPLICATION LABS

NEW

8:30-9:55 a.m. **Customizing Sensory Attributes via Hydrocolloids**
Speaker: CP Kelco

10:30-11:10 a.m. **"Meat" New Trends with Innovative Phosphates**
Speaker: Gene Brotsky, Sr. Technical Service Representative, Innophos Inc.

11:15-11:55 a.m. **Fortify Beverages "Clearly Better" with Calcium Phosphate**
Speaker: Amr Shaheed, Sr. Scientist II, Innophos

1:00-2:25 p.m. **Dried Plums: Natural Solution To Maintaining Shelf Life**
Speaker: James Degen and Jimmy Keeton, Consultants, Faculty Texas A&M University, California Dried Plum Board.

2:30-3:55 p.m. **Natural Colors in Beverages and Confections**
Speaker: GNT USA Inc.

Tuesday, Sept. 18, 2007: Applications Challenges

A complete list of presentations as of 7/16/07. Subject to change.

TRACK: PREPARED FOODS

8:30-9:10 a.m. **Innovation & New Product Development**
Speaker: Michael R. Buttshaw, National Sales and Marketing Manager, Hormel Specialty Products, Hormel Foods Corporation

9:15-9:55 a.m. **Yeast Extracts and Umami Taste - Tools for Sodium Reduction in Food**
Speaker: Otis Curtis, Business Development Manager, DSM Food Specialties, Inc. Savory Ingredients

10:30-11:10 a.m. **Prepared Meals Made Healthy by Fortifying with Omega-3**
Speaker: Emilie Laurin, Technical Support Specialist, North America, Ocean Nutrition Canada

11:15-11:55 a.m. **Safe and Delicious: Natural Preservation Systems**
Speaker: Janet Payne, Business Development Manager, Food and Nutrition, PURAC America Inc.

TRACK: NEW EMERGING INGREDIENTS

1:00-1:40 p.m. **Designing Healthful Spray Dried Powdered Emulsified Systems**
Speaker: Dennis J. Reid, Vice President - Marketing & Technology, Diehl Food Ingredients (A PCI Food Ingredients Division)

1:45-2:25 p.m. **Sodium Acid Sulfate**
Speaker: Carl Knueven, Corporate Manager - Product DevelopmentJones-Hamilton Co.

2:30-3:10 p.m. **Natural Ingredients for Preservation of Carotenoids and Related Ingredients**
Speaker: Rodger Jonas, National Business Development Manager, P.L. Thomas

TRACK: NUTRITIONAL BEVERAGES & FOODS

8:30-9:10 a.m. **Beverage Flavor Radar**
Speaker: Cara Newkirk, Senior Market Manager, FONA International Inc.

9:15-9:55 a.m. **Innovative Food and Beverage Fortification with Natural Tomato Lycopene**
Speaker: Zohar Nir, VP NPD & Scientific Affairs, LycoRed Ltd. Beer-Sheva Israel

10:30-11:10 a.m. **Overcoming Formulation Problems with Dissolved Calcium**
Speaker: Daniel Sortwell, Senior Food Scientist, Bartek Ingredients Inc.

11:15-11:55 a.m. **The Use of Dextrin Soluble Fiber in Healthy Confectionery Products**
Speaker: Tom Parady, Associate Program Coordinator, Food Applications, Roquette America Inc.

TRACK: FLAVORS & FLAVOR ENHANCEMENT

1:00-1:40 p.m. **Acidulant Taste and Flavor Effects**
Speaker: Daniel Sortwell, Senior Food Scientist, Bartek Ingredients Inc.

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Tuesday, Sept. 18, 2007: Applications Challenges

A complete list of presentations as of 7/16/07. Subject to change.

1:45-2:25 p.m. **Use of Dairy Flavors in Cost Optimization Projects**
Speaker: Marilyn Stieve, Dir of Marketing- Dairy Flavors and Priscilla Reeves, Product Development Manager- Dairy Flavors, Chr. Hansen

2:30-3:10 p.m. **Masking Flavors**
Speaker: Agneta Weisz, Vice President Research & Development, Comax Flavors

TRACK: DAIRY & FROZEN NOVELTY

8:30-9:10 a.m. **Stabilizing Dairy and Soy Drinks with Pectin and other Fruit Fibers**
Speaker: Frank Mattes, Sales Manager, Herbstreith & Fox Inc.

9:15-9:55 a.m. **High Protein Frozen Desserts: Extending the Nutritional Revolution to Frozen Desserts**
Speaker: Phil Rakes, Technical Specialist, Main Street Ingredients

10:30-11:10 a.m. **Reduction of Sugar and Calories in Cultured Dairy Products**
Speaker: Corn Product Specialty Ingredients

11:15-11:55 a.m. **Calcium Carbonate: Fortification & Functionality in Dairy and Non-Dairy Beverage and Frozen Dessert**
Speaker: Joann Foster, Technical Manager - Consumer Products, Specialty Minerals Inc.

TRACK: CONFECTIONERY, ICE CREAM & DESSERTS

1:00 – 1:40 p.m. **New Product Development Software for Specific Vertical Markets in the Food and Beverage Industries (Ice Cream/Dairy, Bakery, Beverages)**
Speaker: Ted Pliakos, Vice President-Sales, Advanced Software Designs

1:45-2:25 p.m. **Development of Sugar-Free Grained Mints Using Disaccharide Sugar Alcohols**
Speaker: Philippe Levresse, Project Coordinator - Technology / Applications Development, Roquette America Inc.

2:30-3:10 p.m. **Better for You Confectionery Fruit Snacks**
Speaker: Jim Skidmore, Technical Service - Textural Ingredients, Danisco Texturants & Sweetners

TRACK: HEALTHFUL FORMULATIONS

8:30-9:10 a.m. **Formulating with Wheat Proteins**
Speaker: Brook Carson, Technical Product Manager, ADM Milling Co.

9:15-9:55 a.m. **Optimized Combinations of Fibers Used As Nutritional Stabilizers**
Speaker: Sebastien Baray, Technical Manager, Colloides Naturels Inc.

10:30-11:10 a.m. **Creating Customized Formulations for Improved Immune and Digestive Health Using Innovative Ingredient Solutions**
Speaker: Cristina Munteanu, Food Applications Specialist, GTC Nutrition

11:15-11:55 a.m. **Omega-3 Fortification of Products for Children and Women**
Speaker: John Foley, Technical Services, BASF Corporation

1:00-1:40 p.m. **The Functional Advantages of Nutritive Sweeteners and Juice Concentrates**
Speaker: David Ropa, VP Marketing, TJP Market Development

1:45-2:25 p.m. **Plan Your Oils Future Today: Formulating with Enhanced Soybean Oils**
Speaker: Richard Galloway, President, Galloway & Associates for United Soybean Board

2:30-3:10 p.m. **Magnesium and Potassium - Keys to Better Nutrition**
Speaker: Amr Shaheed, Sr. Scientist II, Innophos

TRACK: PRODUCT DEVELOPMENT ADVANCES

8:30-9:10 a.m. **Tools for Effective NPD - People, Products & Processes**
Speaker: Allan Samson, President, ESCA Enterprises Inc.

9:15-9:55 a.m. **Kids Say the Darndest Things! - Incorporating Kids in Product Development**
Speaker: Judy Lindsey, VP & General Manager, Product Dynamics, a division of RQA Inc.

10:30-11:10 a.m. **Research and Development Tax Credits: The Hidden Treasure**
Speaker: Terry Schwartz, Managing Director, RSM McGladrey Inc.

11:15-11:55 a.m. **Utilizing Workflow/Approval Routing to Facilitate the New Product Development Process**
Speaker: Ted Pliakos, Vice President-Sales, Advanced Software Designs

TRACK: BREAKFAST CEREALS, SNACKS & BARS

1:00-1:40 p.m. **Raising the Bar**
Speaker: Robert Hansen, Manager of Technical Services, Briess Malt & Ingredients

1:45-2:25 p.m. **Optimal Fortification with Calcium Carbonate**
Speaker: Joann Foster, Technical Manager - Consumer Products, Specialty Minerals Inc.

2:30-3:10 p.m. **Soy Protein Applications in Nutritional Beverages, Bars, and Snack Items**
Speaker: Lisa Bradford, Soy Foods Technologist II, Archer Daniels Midland Company

TRACK: APPLICATION LABS NEW

8:30-9:55 a.m. **Formulating Foods with DHA Omega-3, the Vegetarian Source of DHA**
Speaker: Ruben Abril, Director, Ingredient Commericalization, Martek Bioscienes

10:30-11:55 a.m. **Innovations in Dressings, Sauces & Dips**
Speaker: TIC Gums

1:00-2:25 p.m. **Solving Texture Challenges - Innovating New Textures and Maintaining Texture and Quality in the Face of Rising Ingredient Costs**
Speaker: Max Koxholt and Marshall Fong, National Starch Food Innovation

2:30-3:55 p.m. **Innovative Solutions to Successfully Navigating Current Food Trends**
Speaker: Vegetable Juices

Wednesday, Sept. 19, 2007: Application Labs

A complete list of presentations as of 7/16/07. Subject to change.

TRACK: APPLICATION LABS

8:00-9:15 a.m. **Flax - An Exciting Food Ingredient**
Speaker: Flax Canada 2015

8:00-9:15 a.m. **Raisin Functionality Around the World**
California Raisin Marketing Board

9:30-10:45 a.m. **Masking of Sweeteners in Beverage Applications**
Speaker: Jennifer B. Mei, Senior Scientist I-Flavor Analytical, Takasago International Corp.

9:30-10:45 a.m. **Yeast Extracts are Powerful Tools for Food Formulators: Improving Flavor Impact, Driving Product Preference, and Reducing Salt**
Speaker: Otis Curtis, Business Development Manager, DSM Food Specialties Inc., Savory Ings.

11:00-12:15 p.m. **Ocean to Plate: The "Nuts and Bolts" of Formulating with Long Chain Omega-3s EPA & DHA**
Speaker: Ernesto Hernandez, Director of Process Development, OmegaPure

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PART A: SEMINAR FEES

☐ **Individual Registration** **$650.00**

☐ **Early Bird Discount** **$550.00**
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☐ **Team Discount** (2 or more) **$500.00 ea.**
NEW (Each person from the same company saves $150.00-includes Early Bird Discount).

Registration includes 2 1/2 days days of sessions, including the **opportunity to attend up to 3 Application Labs on Monday, 3 on Tuesday, and 3 on Wednesday,** the Proceedings, 2 breakfast buffets, 2 luncheons, networking reception, refreshment breaks and admission to the Expo.

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MAIL OR FAX REGISTRATION TO:

Jennifer Bogdajewicz, Seminar Coordinator
***Prepared Foods'* R&D Applications Seminar**
1050 IL Route 83, Suite 200
Bensenville, IL 60106
Fax: 248 502-1002
Questions? Call 630 694-4353 or bogdajewiczj@bnpmedia.com

CANCELLATION POLICY

Cancellations must be in writing. Refunds will not be made for cancellations received after September 3, 2007. Alternate parties may be substituted at any time without penalty.

SPECIAL REQUIREMENTS

If you are physically challenged and/or have special meal requirements, please let us know. _____ _____

PART B: APPLICATIONS LAB SESSIONS

NEW

The Applications Lab sessions provide an interactive venue to further demonstrate an ingredient's functionality or its application in a finished product. **There is no additional charge to attend the Lab sessions**, however they are limited to 40 attendees per session, on a first-come, first-served basis. Please limit your choices to 3 Lab sessions per person on Monday, 3 on Tuesday and 3 on Wednesday.

I am registering for the following: (choose a maximum of 3 on Monday, 3 on Tuesday, and 3 on Wednesday)

MONDAY

☐ **8:30-9:55 a.m.**	Customizing Sensory Attributes via Hydrocolloids, CP Kelco
☐ **10:30-11:10 a.m.**	"Meat" New Trends with Innovative Phosphates, Innophos
☐ **11:15-11:55 a.m.**	Fortify Beverages "Clearly Better" with Calcium Phosphate, Innophos
☐ **1:00-2:25 p.m.**	Dried Plums...Naturally Extending Food Product Shelf Life, California Dried Plum
☐ **2:30-3:55 p.m.**	Natural Colors in Beverages and Confections, GNT USA, Inc.

TUESDAY

☐ **8:30-9:55 a.m.**	Formulating Foods with Life's Omega-3, the Vegetarian Source of DHA, Martek
☐ **10:30-11:55 a.m.**	Innovations in Dressings, Sauces & Dips, TIC Gums
☐ **1:00-2:25 p.m.**	Solving Texture Challenges, National Starch Food Innovation
☐ **2:30-3:55 p.m.**	Innovative Solutions to Successfully Navigating Current Food Trends, Vegetable Juices

WEDNESDAY

☐ **8:00-9:15 a.m.**	Flax - An Exciting Food Ingredient, Flax Canada 2015
☐ **8:00-9:15 a.m.**	Raisin Functionality Around the World, California Raisin Marketing
☐ **9:30-10:45 a.m.**	Masking of Sweeteners in Beverage Applications, Takasago
☐ **9:30-10:45 a.m.**	DSM Yeast Extract Based Process Flavors - Tools for Building a Great Taste, DSM, Food Specialties USA, Inc.
☐ **11:00-12:15 p.m.**	The "Nuts and Bolts" of Formulating with Long Chain Omega-3s, OmegaPure

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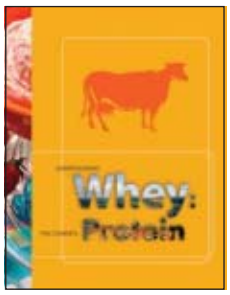

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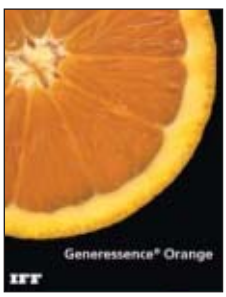

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How do you generate interest in your company?

In the *Prepared Foods* Literature Review section! Contact Christin Schrei @ (231) 487-0400 or schreic@bnpmedia.com for more information.

Supplier Literature

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